

Learn How Reading, Pa., Installer Sells 'Em—In This Issue

American Artisan

and Hardware Record

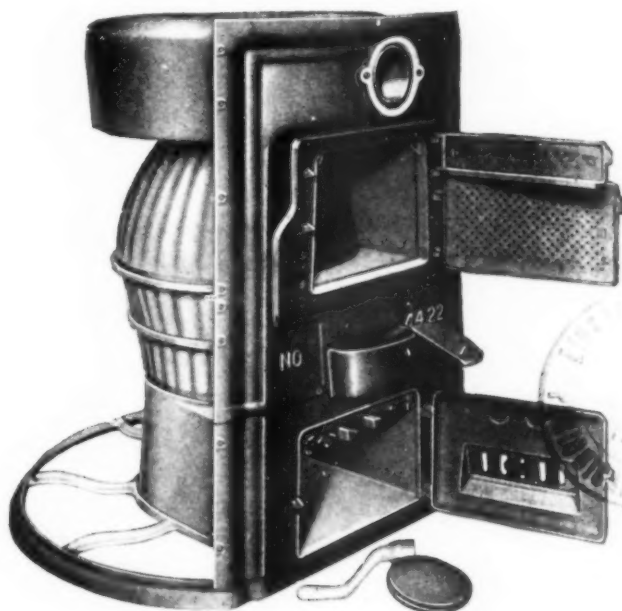
Sheet Metal Work—Warming—Heating

Vol. 94, No. 15

CHICAGO, OCTOBER 8, 1927

\$2.00 Per Year

THATCHER METEOR FURNACE



Exceptional Furnace Value to Offer the Home Owner

WHEN you offer the Thatcher Meteor Furnace to a customer, you are offering the greatest value in furnaces today.

Point for point, no other furnace embodies the many modern improvements or possesses the advantages of the Thatcher Meteor Furnace.

features that will help you build sales and profits.

Its low initial cost, due to the ease of installing and its high efficiency, are factors that have a definite appeal to home owners. Its economy of operation establishes a new standard and will help you increase your own business.

Write for trade information and literature.

The Thatcher Company

Since 1850

NEW YORK
21 W. 44th St.

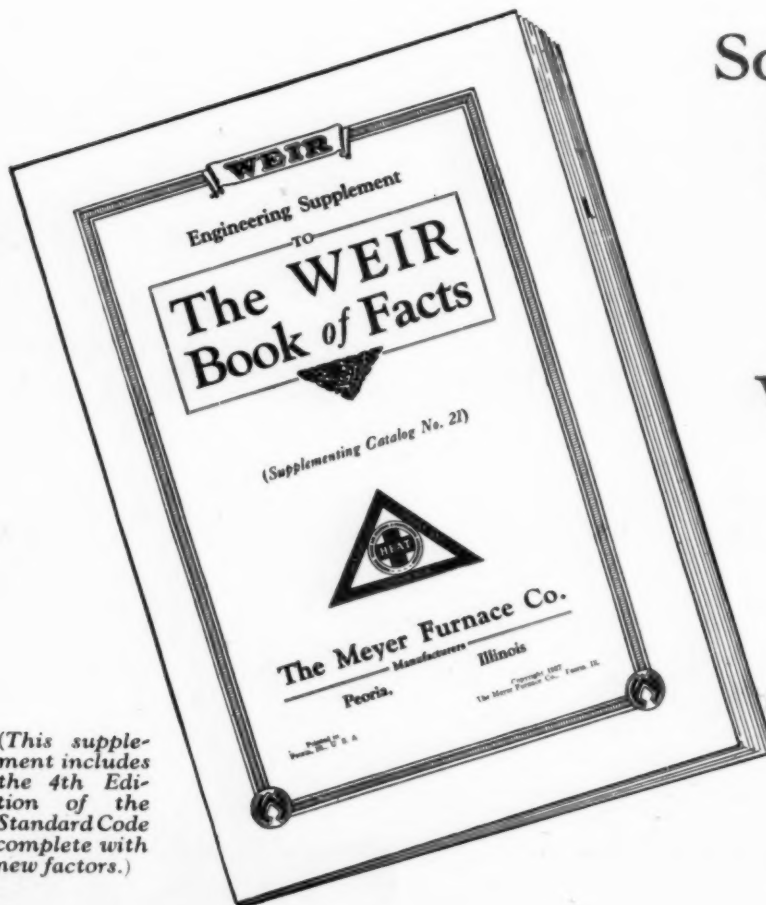
NEWARK, N. J.
39-41 St. Francis St.

CHICAGO
341 N. Clark St.

THATCHER

BOILERS-FURNACES-RANGES

Something
NEW
again
by
WEIR



(This supplement includes the 4th Edition of the Standard Code complete with new factors.)

**Explains Application of the Code in detail---
gives tables making Code figuring easy**

THE purpose of this booklet, prepared by our Engineering Department, is to help warm air heating contractors figure according to the Standard Code.

It not only gives the complete Standard Code but gives examples which fully explain how to use it, and tables making it easy to do so.

OUR Engineering Department also supplies "Standard Code Formula" forms to be used in figuring each installation.

A supply of these will be sent on request.

Send the coupon below today for the Book of Weir Facts and the Engineering Supplement.



IN addition to this Engineering Supplement and our other mail services, a corps of experts is maintained in our Engineering Department for preparing detailed heating plans and estimates for Weir dealers.

Ask about this service which is better than ordinary and in keeping with the high quality of the Weir.

The MEYER FURNACE Co.
Peoria, Illinois

The Meyer Furnace Co., Peoria, Ill.
Send me a copy of your WEIR BOOK OF FACTS with Engineering Supplement.

Name

Street Town State



This to This

and here's the reason: The Carburetor, placed between the combustion dome and the radiator mixes heated air with the unburned gases and *burns the smoke.*

CAN you conceive of thick, black clouds of smoke quickly changing to a thin, gray haze and then vanishing?

You don't have to imagine it. You can *see* it done. You can do it yourself!

Fire a SUPERIOR SUPER-SMOKELESS Warm Air Furnace with the cheaper grades of soft coal until the black smoke belches forth from the chimney. Then open the Carburetor door. In an inconceivably short time the chimney clears and you can *see* the smoke being burned by the *secondary combustion*—apparently the impossible!

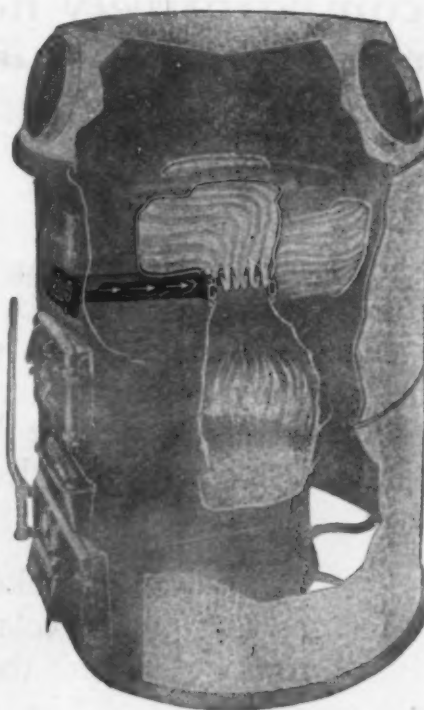
If you can sell furnaces, you can sell *more* of these, with ample profit on every sale.

The SUPERIOR SUPER-SMOKELESS Furnace lends itself so well to an actual, *visual* demonstration of its remarkable gas-and-carbon-burning principle with either soft or hard coal that many sales result. Write for full particulars—how you can make money from our Sales Demonstration Plan.

UTICA HEATER COMPANY, Utica, N. Y.
Division of National Radiator Corporation.

365 East Illinois St., Chicago, Ill.

Makers of Superior Pipe and New Idea Pipeless Furnaces.



SUPERIOR SUPER-SMOKELESS WARM AIR FURNACE

SUPERIOR DEALERS ARE EXCEPTIONALLY LOYAL—WHY?

Published Weekly by American Artisan and Hardware Record, Inc., 629 South Michigan Avenue, Chicago, Illinois.
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Agricola

A comparatively new name in the furnace industry but look how it has grown!

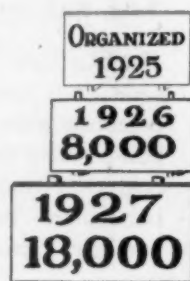


NO mystery about it — Agricola Furnaces were designed by seasoned engineers, the Agricola plant was laid out by architects familiar with foundry requirements, the Agricola foundry was equipped by leading engineers.

No expense was spared to make this better furnace *because* Agricola saw the ever growing market that is *present now* and which *will be greater in the years to come* for the higher class warm air furnaces.

That's why Agricola planned *big* — that's why Agricola furnaces are manufactured by the latest methods and produced at minimum cost.

The Agricola agency, like the Agricola furnace, is something better, something for live, up-to-date warm air heating contractors — let us tell you about it *now*.



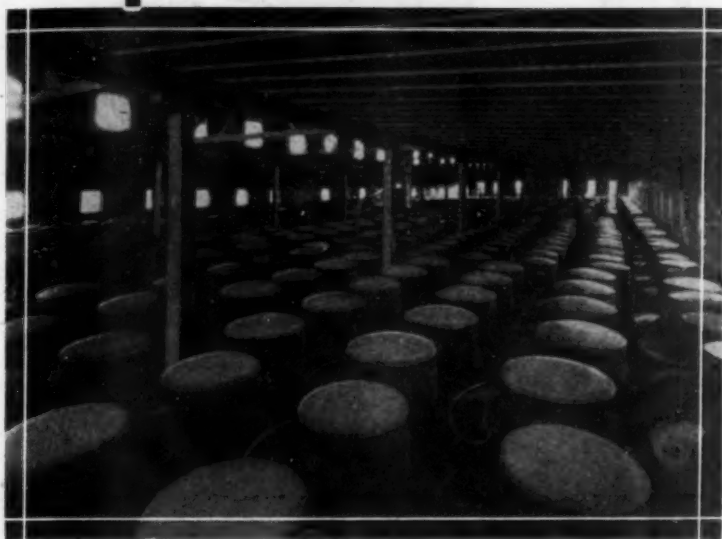
1928 will be an Agricola year.

Agricola Furnace Company

GADSDEN, ALABAMA

Mention AMERICAN ARTISAN in your reply—Thank you!

Lennox



GLIMPSE
OF
PART OF
ONE OF
OUR
WARE-
HOUSES

*You want
Your
Furnaces
When
You
Want
Them*

Lennox Warehouses are filled with completed furnaces ready to be shipped RIGHT NOW on a moment's notice.

WE are not only the largest producers of steel furnaces in the world but we are also the only manufacturers who store sufficient furnaces to be able to supply all dealers all they need in the fall.

We store one-fifth of all the furnaces we make so that we can and **do guarantee** immediate shipment the day an order is received, even in the busiest months of the fall.

Our warehouses at our two plants contain as many completed furnaces **ready to go** as our nearest competitor in steel furnaces can make in an entire year.

Every Torrid Zone Steel Furnace is fitted at our factories—there is no delay in setting them up.

The Torrid Zone Furnace has been the Favorite for over Thirty-One years. It is holding its leadership because it is a *good furnace an original furnace of high quality.*

It is a *guaranteed furnace*—a furnace that builds business.

Every Torrid Zone Steel Furnace is riveted and calked absolutely gas tight.

Find out more about the Torrid Zone Steel Furnace and the Agency for your territory—write for our catalog NOW.

The Lennox Furnace Company
Marshalltown, Iowa Syracuse, New York



Torrid Zone Furnace

The Economical **NIAGARA** **FURNACE**



The NIAGARA is an engineering marvel of efficiency.

In design—in material—in workmanship—it is a finished product—the result of over thirty-five years of experience.

It embodies quality, ease of installation, attractive price and gives long service with freedom from repair.

*Ask us about the Niagara
Dealer Franchise*

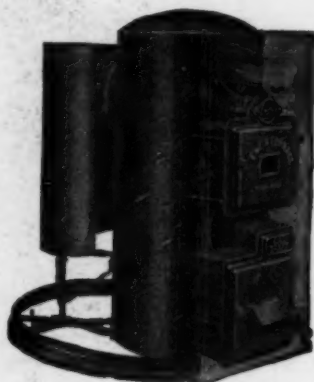
*Also Manufacturers of
Monarch Furnaces*

THE FOREST CITY FOUNDRY & MFG. CO.
1220 Main Avenue
Cleveland, Ohio.

IT'S HERE!

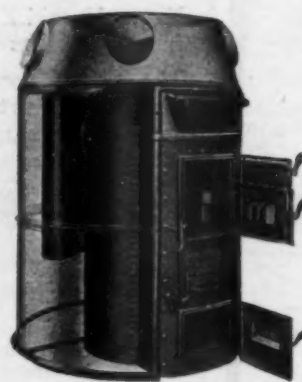
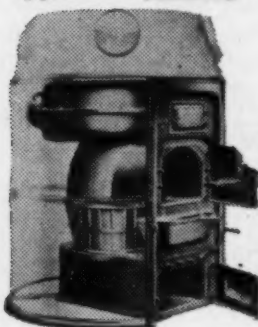
We speak of the Fall Rush when Real Service is absolutely necessary if you are to retain the good will of your customers.

From no other source, do we believe, you can obtain such Complete Selection and Satisfactory Service on either Furnaces or Supplies, as from the Standard Folks.



Weir Steel Furnace

Nesbit Moist Heat
Furnace



Stanco Steel Furnace

*We have everything needed by the Furnace-man. Ask for
General Catalog No. 5 and Furnace Catalogues and Prices.*

STANDARD FURNACE & SUPPLY COMPANY
OMAHA, NEBRASKA

"Put Your Rule On The RYBOLT"

A Safe Rule To Follow In Judging Furnace Values.

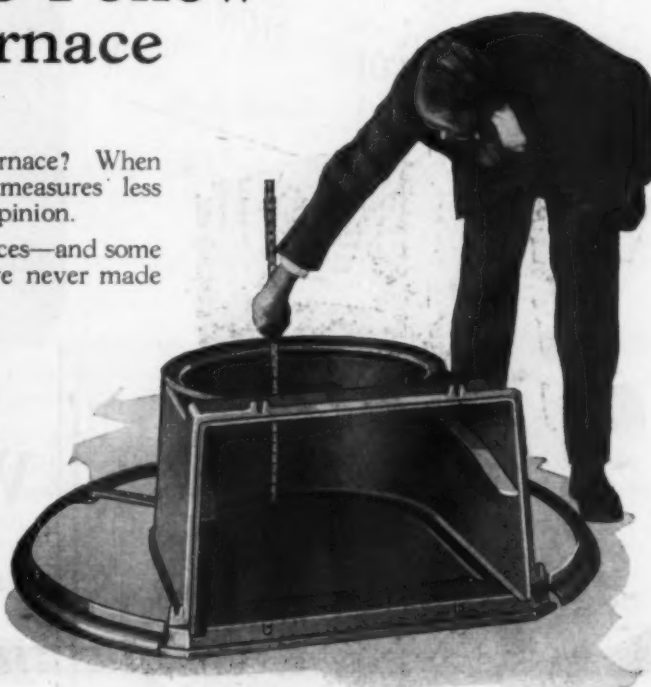
WHEN is a 24" furnace not a 24" furnace? When the inside diameter of the fire-pot measures less than 24", of course—at least that is our opinion.

Your rule can tell you a lot about furnaces—and some things that will surprise you if you have never made rule comparisons before.

This is the first of a series of advertisements, the object of which is to show that the Rybolt furnace will not only stand the rule test, but that, size for size it demonstrates marked superiority over the majority of other furnaces in this respect.

We invite you to make rule comparisons between the Rybolt and any other make furnace you may have on your floor.

A folder containing the whole story in pictorial form—from ash-pit to radiator will be sent you on request. A post card will bring it.



No.1 The Ashpit

A roomy ashpit is a great convenience for the furnace owner and a safeguard for the grate. It also makes the grate easier of access when it is desired to remove it for periodical cleaning.

The illustration clearly shows the ample capacity of the ashpit of the Rybolt furnace, and below we give the heights of the ashpit in the different sizes from 24" to 30" inclusive.

Height of Ashpit in the New RYBOLT Furnace

No.	181	201	221	241	261	281	301
In.	13	13	14	14	15	15½	15½



The RYBOLT Heater Company
ASHLAND - OHIO

ROBINSON STEEL FURNACE

Made of
TONCAN COPPER
MO-LYB-DEN-UM IRON
Fortified against
RUST AND CORROSION



Designed According to the correct Rating Formula---

THAT means that it is an up-to-date furnace—not only built sturdily of the highest quality material but designed to render the highest heating efficiency.

Notice that there is plenty of room for cold air return and easy flow of air over radiating surfaces.

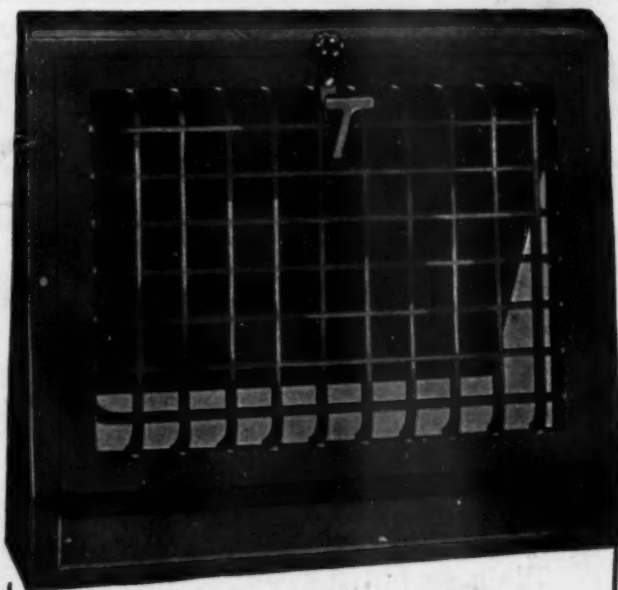
The ROBINSON is Electric Welded Throughout to insure absolute leak proof construction. It is furnished with one or two outlets as desired.

Notice that the radiator is supported independently—no weight on furnace drum.

New Dumping Device—One Piece Circular Grate—large water pan—lever shaker handle, and Shipped with front assembled are other features that you will appreciate.

The agency for the Robinson Steel Furnace means steady profits on a reliable furnace—write today for full details.

The A. H. ROBINSON COMPANY
MASSILLON, OHIO



Have you seen it? WALWORTH New Standardized STYLE B Baseboard Register

NOT only made throughout in accordance with the rules of the Standardization Committee but it is the *neatest* durable register ever made to sell at a popular price.

Simple, easy and accurate in operation, cast face made of the best iron, finished in all the popular finishes and made in the following sizes:

8x10	inch	2 1/4	base extension
8x12	"	2 1/4	"
9x12	"	2 1/4	"
10x12	"	3 1/4	"

Study the features of this new register.

Write today for full particulars and prices on the Walworth New Standardized Style B Baseboard Register.

Order some for that next job—your customers will want them.

Made by the makers of Walworth Double Gratings, Semi-Steel Registers, Side Wall and Floor Registers, Ventilators, Borders and Casings Rings.

THE WALWORTH RUN FOUNDRY COMPANY

West 27th Street and N. Y. C. & St. L. R. R., Cleveland, Ohio

Distributors:

ROBINSON FURNACE CO., Chicago, Ill.
HART MFG. CO., Louisville, Ky.
PHILLIPS & BUTTORFF MFG. CO., Nashville, Tenn.

Eastern Representatives:

PENN TINSMITH'S SUPPLY CO., Philadelphia, Pa.



2 to 1 - He'll Lose

It's really no bet at all. Any runner dragging a hundred pounds of lead is so badly handicapped he is sure to lose.

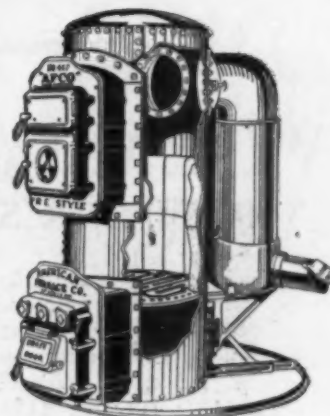
* Each of us is a runner in the game of business. We win or lose, depending on how we are prepared for the race.

In the furnace game the rules are constantly changing. New competition arises—demand changes—new ideas replace old practices, and time payments bring with them a new problem.

The fellow who ignores or fails to provide for any one of these rules soon finds that it acts as a ball and chain on his progress. He is sure to lose in the race to success.

The "AFCO" Dealer Plan helps "AFCO" dealers to meet these changing conditions. "AFCO" Boiler Plate Furnaces are modern in every detail—they are gas tight—economical fuel burners and efficient heaters.

Decide now to get rid of all your handicaps—start by writing for the "AFCO" Dealer Plan. "AFCO" is one manufacturer that backs you to win. C'mon, let's get started. **American Furnace Company, St. Louis, Mo.**



The Daddy of them all—the R. E. Style "AFCO" Boiler Plate

Other Furnaces Come and Go, but "AFCO" Stays and Grows

BOOMER

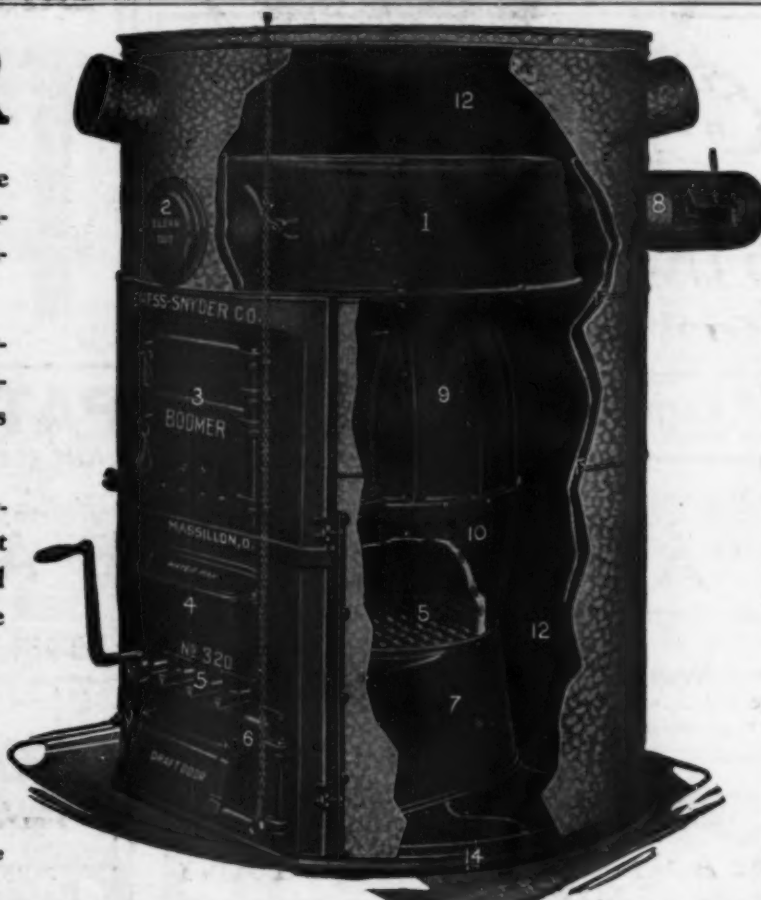
THIS is our latest addition to the Boomer line. We heartily recommend it for your favorable consideration.

The severe tests we have given this furnace have proven its durability. The unsolicited reports we received from users last winter have been most flattering.

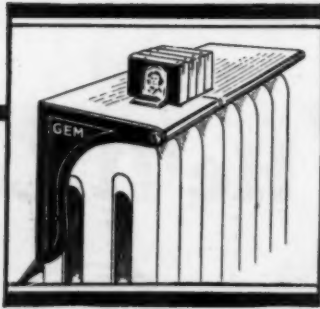
For durability, economy, easy to operate, easy to set up and the low price at which we offer this furnace, you will make no mistake in arranging for the agency.

THE HESS-SNYDER CO.
MASSILLON, OHIO

Makers of BOOMER FURNACES for Forty-Three Years



Say you saw it in AMERICAN ARTISAN—Thank you!



"GEM" ADJUSTABLE RADIATOR SHIELDS

Their exclusive *adjustable* feature and moderate prices commend "Gem" Radiator Shields to dealer and consumer alike. 8 popular sizes, gold-bronze or aluminum finish. Adjustable to radiator top widths, 6" to 13"; lengths, 11" to 65". Retail \$4 to \$7.

Put your order in promptly.

BUY FROM YOUR JOBBER

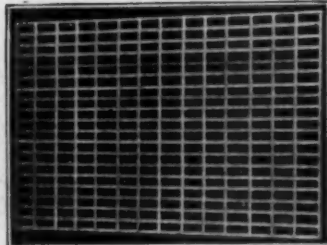


1140 BROADWAY, NEW YORK, N.Y.

Eaglesfield EXTRA HIGH GRADE WOOD FACES

MADE by special machinery. Finest white quartered oak and High Speed Ball Bearing mechanism insures perfect construction. Specially designed grooving saw cuts all grooves exact size. Eaglesfield Wood Faces are stronger than others—the cross pieces are 1/16 inch deeper than those used in other faces.

Single orders or carloads promptly at fair prices. Write today.



EAGLESFIELD VENTILATOR CO.

918 DORMAN STREET

INDIANAPOLIS, IND.

"American Seal" FURNACE CEMENT

Roof Cement — Stove Putty
Plumbers Putty

PAINTS and SPECIALTIES

WILLIAM CONNORS PAINT MFG. CO.

TROY

Established 1852

NEW YORK

JAMES L. PERKINS

Western Distributor

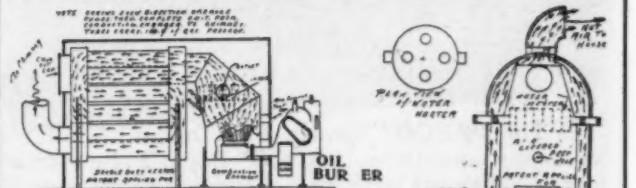
140 S. Dearborn St., Chicago, Ill.

REPAIRS

for STOVES-FURNACES-BOILERS

Send for our illustrated Order Blanks

NORTHWESTERN CHICAGO-ILLINOIS
STOVE REPAIR CO.



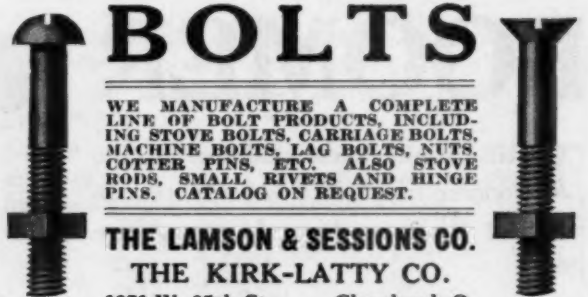
SIDE VIEW
MEYERS DOUBLE DUTY HEATER
AND COMBUSTION CHAMBER

Fig. 1 shows combined fuel saving unit with burner in place. Arrows indicate volume of heated gases at top of fuel saver and small amount escaping into chimney.

FRONT VIEW OF COMBUSTION
CHAMBER

Fig. 2 shows air flowing in at the bottom and up around the furnace and tubes to rooms above.

IF THEY DON'T BUY IT, THEY PAY FOR IT, ANYWAY! We get every heat unit and put it to work... People can burn oil now cheaper than coal... We have a real money-maker for you, Mr. Dealer... Heat TWO apartments for the cost of ONE. MEYERS FUEL SAVER CO., Inc. Janesville, Wis.



BOLTS

WE MANUFACTURE A COMPLETE LINE OF BOLT PRODUCTS, INCLUDING STOVE BOLTS, CARRIAGE BOLTS, MACHINE BOLTS, LAG BOLTS, NUTS, COTTER PINS, ETC. ALSO STOVE RODS, SMALL RIVETS AND HINGE PINS. CATALOG ON REQUEST.

THE LAMSON & SESSIONS CO.

THE KIRK-LATTY CO.

1971 W. 85th St.

Cleveland, O.

PATTERNS FOR STOVES AND HEATERS

THE CLEVELAND CASTINGS PATTERN COMPANY
CLEVELAND, OHIO

PATTERNS

FOR STOVES AND HEATERS FIRST-CLASS
IN WOOD and IRON
VEDDER PATTERN WORKS ESTABLISHED 1835 TROY, N. Y.

IRON AND WOOD

STOVE PATTERNS

QUINCY PATTERN COMPANY
QUINCY, ILLINOIS

Read the Wants and Sales Pages

*Are you prepared to tell
your Prospects about*

Forced Air



Heated by Forced Air

*Helps you to sell to better grade
homes, garages, industrial
buildings, churches, etc.*

LOW FIRST COST and high heating and ventilating efficiency are the secret of the growing popularity of **FORCED AIR**. Everywhere throughout the United States and Canada builders, contractors, architects and buyers are discovering the tremendous advantages of Forced Air Heat and Ventilation.

Those who build to sell find "Forced Air" a big selling asset. The story of **GUARANTEED HEAT** in every room—with four changes of air every hour—effective ventilation—and *cool air pouring up the registers in warm weather* is the most interesting story ever told about any heating system. It gives people what they have always wanted, heat and ventilation from one economical system.

AIR IN MOTION is recognized by science as ideal for health. Forced Air provides vitalizing, joyous, stimulating heat, the kind of heat that is best for either work or play.

What is **FORCED AIR**? Forced Air is air pushed through the pipes of a warm air furnace by mechanical pressure—by a fan system. It gives the warm air furnace the one thing it lacked—positive air circulation. Yet allows it to revert to a gravity system at pressure of a button.

FORCED AIR HEATING is better, yet it costs less than radiator systems. Costs less to install—gives just as positive heat—and gives four changes of air every hour!

Read what Walter R. Hard, Manchester, Vermont writes:
"When our house gets

filled with cooking odors the fan changes the air in no time. Any time the house becomes cool I simply turn on the fan. I raised the temperature in the living room four degrees in five minutes. You can note the change of air almost as soon as the fan is started.

"My house is 48 feet long and 24 feet wide except for an ell which is 40 feet wide. With the fan system I am able to get ample heat in any room no matter how severe the wind is against it. Instead of opening the draft in the morning and forcing the fire, I simply turn on the fan and use the air collected in the casing to warm the house. On very cold mornings I may close the check, but not more than half a dozen times have I put on the draft. The resultant saving in fuel is very marked. In short, the fan system removes the last argument against warm air heating by forcing it against the wind and into rooms with long pipe runs where gravity system alone made it possible to get heat."

FORCED AIR heating is secured through the use of the Miles Automatic Furnace Fan in combination with any standard make of warm air furnace. Even the largest homes can now be heated by "Forced Air". Cellarless houses also.

Let Us Figure Your Plans for Heating—Free

Our engineering department is glad to prepare plans for Forced Air Heating and ventilating systems free of charge. Send your blue prints and learn how you can save money and still give your customers the best heating system money can buy.

THE WARM AIR FURNACE FAN COMPANY
6521 Cedar Avenue :: :: Cleveland, Ohio



THE WARM AIR FURNACE FAN COMPANY, 6521 Cedar Avenue, Cleveland, Ohio
Kindly send me complete information about the Miles Automatic Furnace Fan.

Name _____

Address _____

MILES AUTOMATIC FURNACE FAN

Say you saw it in AMERICAN ARTISAN—Thank you!

Founded 1880

Published to Promote
Better
Warm Air Heating
and
Sheet Metal Work

American Artisan and Hardware Record *Sheet Metal Work-Warm Air Heating*

Yearly Subscription
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\$2.00 Per Year

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Unsell Yourself That Business Is Bad

Elbert Hubbard used to tell the story of a naturalist who divided an aquarium with a glass partition, putting a bass in one end and minnows in the other. Every time a minnow approached the glass partition, the bass struck. But after three days of bruising his nose, he gave it up and merely took the food that was given to him. Though the naturalist removed the glass partition and the minnows swam around him, the bass paid no attention to them, because he had been sold on the idea that business was bad. Occasionally we hear of salesmen who need to try another strike. As a matter of fact, the partition has been removed for some time. There are orders on all sides for those who go after them.

Linde can help you to stop the "oxygen leaks"

MORE than you realize. You sit down and study oxygen prices before you buy it. A few cents loom large in your eyes at that time. Then, when oxygen is shipped in to your storehouse, you probably forget all about it.

For one thing, you forget the oxygen valve in the top of the cylinder. It is the watchman of your oxygen supply. The Linde oxygen cylinder valve has a double seat. It prevents leaks whether it is open or closed. A glance at the diagram will show you why.

But more important still is the waste of oxygen in use. Linde service

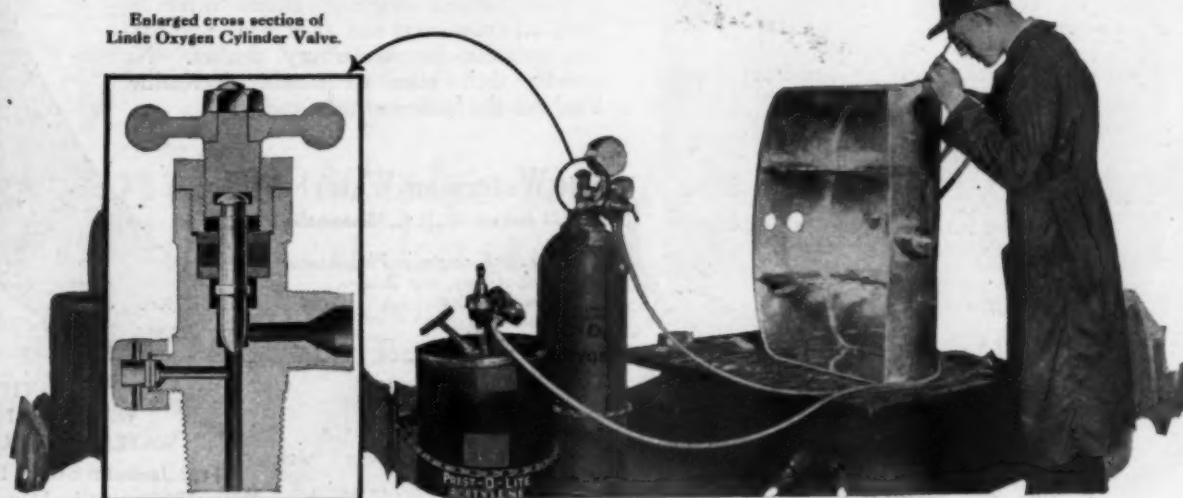
develops the most efficient and economical use of oxygen by every customer. Linde service men can show you how to conserve oxygen by proper process control. Linde procedure controls are detailed instructions for carrying out welding and cutting operations. They describe economical welding methods. They are free to Linde customers.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation



General Offices: Carbide and Carbon Building
30 East 42d Street, New York

37 PLANTS 107 WAREHOUSES



LINDE OXYGEN

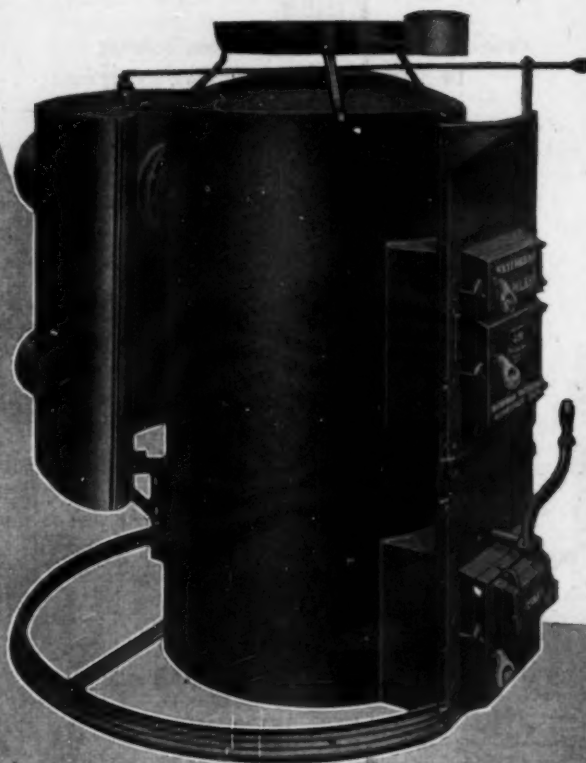
WATERBURY SEAMLESS FURNACE

Reg. U. S. Patent Office.

Welcomed by Home Owners Everywhere

THE decided furnace improvements, introduced in the new Waterbury are receiving a big welcome from home owners—and increasing sales for Waterbury dealers.

Folks quickly appreciate the seamless, sealed body and radiator of welded steel, the heaviest used in furnace construction—more durable and permanently gas-tight. No bolts, no rivets, no calking, no cast iron joints.



And note the humidifier—flat, shallow and placed at the hottest part, *in the center, so that every room gets humidity. Fully automatic feeder at a new low cost.*

These features and many others turn prospects into customers and then into enthusiastic boosters for Waterbury dealers. No wonder their sales are steadily increasing. Find out the facts—write us today.

The Waterman-Waterbury Co.

1122 Jackson St., N. E., Minneapolis, Minn.

Complete Stocks carried in Philadelphia, Pittsburgh, Albany, New Orleans, Kansas City, Denver, San Francisco and Seattle.

**THE
WATERMAN-
WATERBURY CO.**

1122 Jackson St., N. E.
Minneapolis, Minn.

Please send me complete details for the Waterbury Agency proposition and your illustrated catalog.

Name

Address



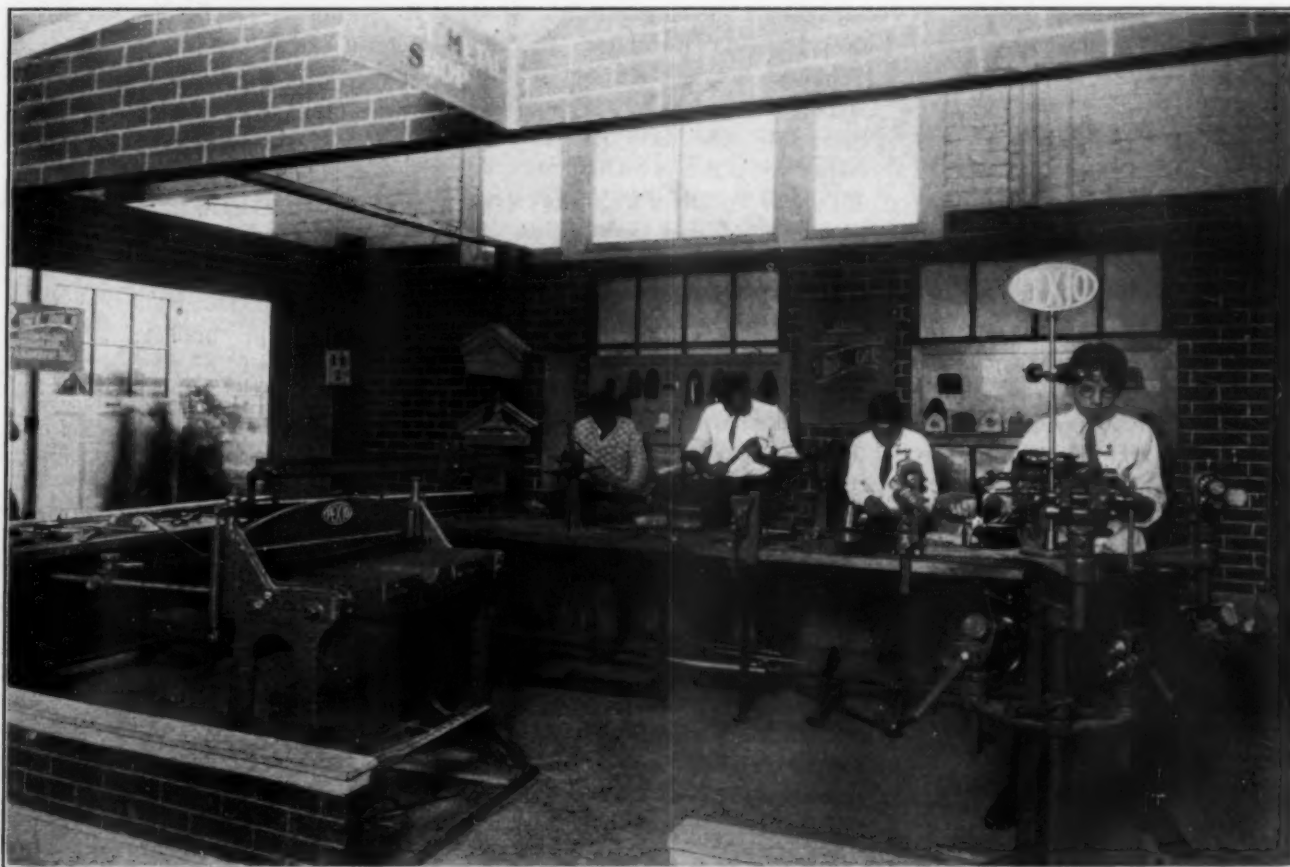
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Vol. 94

CHICAGO, OCTOBER 8, 1927

No. 15



Interior of Sheet Metal Work Shop Erected and Equipped by Pexto During Eastern States Exposition Held at Springfield, Massachusetts, During the Latter Part of September. This Sheet Metal Shop Was One Part of the Work of the Junior Achievement Club

Juveniles Make and Sell Sheet Metal Products at Eastern States Exposition

*Big Show Held at Springfield, Massachusetts
During Latter Part of September*

THE Eastern States Exposition is not disputed as being the largest Industrial Annual Exposition of its kind. This big show is put on in Springfield, Massachusetts, September 18 to 24, three acres under one roof and five acres under tents. The average attendance was approximately two hundred and fifty thousand, drawn from thirty-two states and Canadian provinces.

Among the many juvenile educational activities represented were the Junior Achievement Clubs staging in the permanent building model shops covering practically every craft including sheet metal work.

However, this is the first year that a typical sheet metal shop in operation was exhibited by the Junior Achievement Bureau.

This was brought about with the co-operation of The Peck, Stow &

Wilcox Co., Southington, Connecticut, who equipped the complete shop in a very creditable manner as shown in the accompanying illustration.

A great many practical sheet metal workers and officials of our manufacturing industries took full advantage of all that this model, fully-equipped shop offered.

A definite working schedule was maintained, juvenile workers ring-

ing in at 9:00 a. m., out at noon and working afternoons from 2:00 p. m. until 5:00 o'clock daily. The success of this particular exhibit was due to the untiring efforts of L. Broemel, Manager of Sales of The Peck, Stow & Wilcox Company's Machinery Department, who personally conducted the shop, keeping its workers employed and production coming.

It is to be realized that the company was not so keen to make sales on the premises, but undertook in an elaborate, practical way to represent the sheet metal industry and demonstrate the common tools that machines used in the craft.

Harry Gay—Specialist for the Junior Achievement in wood and metal work—turned over to the sheet metal shop fourteen picked boys not over sixteen years of age, a different group of four boys working mornings and afternoons respectively.

Articles to be made in each of the Junior Achievement Shops were selected for their usefulness and which could be made in fair quantities and to be sold at very reasonable prices.

A candle sconce and an all-metal airplane offered two interesting projects for the sheet metal shop that were laid out and after the first set of metal patterns were procured, production was started and sold out before the close of the week.

Soldering was prohibited as a fire hazard, making the work doubly interesting to the visitors in showing what could be accomplished in turning out sheet metal products with lock seam.

The all-metal airplane with a wing expansion of twelve inches and measuring sixteen and one-half inches in length without the propeller was seamed throughout and the demand could not be satisfied. The proceeds of the sale of articles made during the life of the exhibit went to the Junior Achievement Clubs for future additional equipment.

From an educational viewpoint the layman mechanic and school official felt fully repaid for their visit

to the Junior Achievement Building whose exhibits were unique and so vastly different from so many other industrial exhibits on the grounds.

In spite of the fact that the Pexto company has been manufacturing the Holdall Revolving Machine Standard for several years, this fixture commanded a great deal of approval. This Revolving Machine Standard can be seen in the illustration at the right end of shop with operator. The base measures 16 inches while the revolving turret is 30 inches. Therefore, floor space is conserved and any eight machines as are regularly made for the common bench standard can be used in this fixture. The upper turret holding four machines revolves. The lower stationary turret holds four more reserve machines. It was demonstrated at this exhibit that considerable congestion would have resulted if it were not for the Holdall Revolving Machine Standard that held eight important rotary machines always ready for instant use taking up floor space of only 30 inches in diameter.

Besides a full equipment of Bench Stakes and Hand Tools the following machines were employed:

Squaring shears, circle shears, bar folder, square pipe and box former, forming rolls, grooving machine, holdall revolving machine standard with the following machines: Elbow edging machine, burring machine, turning machine, wiring machine, deading machine, crimping and beading machine, setting down machine, Moore's double seaming machine.

Trade Development Book to Be in Print Before Cleveland Convention

All members of the Tri-State Sheet Metal Contractors' Association received a letter at the expense of Geo. Harms in an effort to secure subscriptions to the Trade Development Book, which will go to press before the next National Association of Sheet Metal Contractors' Convention in Cleveland.

This is the only book published with sheet metal construction de-

tailed in all of its different angles, and it will contain standard details of all constructions, which will not only be of benefit to the sheet metal contractors, but will furnish details for the architects and contractors so that same may be incorporated in their plans and specifications, thereby setting a standardization to a certain extent.

The National Association has already invested approximately \$25,000.00 in this publication and needs to sell five thousand copies of the book at \$10.00 each to complete the work and publish same. This means that the National Association will be reimbursed for money already expended on this publication, which is for the benefit of all sheet metal workers in general; then the association can give time to national organization work, as it will be relieved of this burden.

You should show the spirit of co-operation in speeding up this work by subscribing for this book. The price of this book is \$10.00, and you should order the number of books that you wish and send your order in to the National Secretary together with your check for \$5.00 (half of the purchase price) for each book ordered, sending the other \$5.00 when book is delivered. The reason for part payment accompanying the order is that it saves the Trade Development Committee from having to borrow money to complete this work from which you will reap dividends; all members of the Trade Development Committee doing the work gratis.

Wrong Address Given For Vail Manufacturing Co., Fort Wayne, Ind.

In our issue of September 24, 1927, there appeared an article on the new adjustable swing chimney top of the Vail Manufacturing Company. In the article the address of the Vail Manufacturing Company was given as 1111 Broadway, Fort Wayne, Indiana. This was in error, as the address of the company is 1017 Columbia Avenue, Fort Wayne, Indiana.

Describing One Method of Evolving Leader Head Designs of Various Kinds

Knowledge Is Power Now as Ever and He Who Has Knowledge Has Power

By O. W. КОТНЕ, Principal St. Louis Technical Institute

WE here start a new series of articles, covering the Leader heads, Cornice designs and some skylight and Marquee work. It is more for the general sheet metal workers, who desire an acquaintance with a larger variety of work. In our last year's series we considered round pipe work.

There is, however, one thing on which I wish to refresh the reader's mind, and that is—if you do not know where and how to use this material—don't throw it away, but rather turn the thing over and over in your mind, wondering how and where you can use it. The same thing applies to all those folks who most proudly say, "O! I know that," and then proceed to close their mind to future demonstrations.

Now, I want my reader friends to use their brain—to be prosperous mentally, because all we get on this earth comes from our head. I do not want one of you to always go around looking for the "hole in the doughnut"—find fault, criticize and knock, making yourself smaller. It is better to boost and grow big. When you get a new idea in your mind turn it around and around until it gets into a shape where and how you can use it. That is the way all of us have to do—we all make mistakes, but that is how we learn. It is only those who are afraid—who have a streak of yellow in them, who lock up their choice ideas, like in a jail, and let them die.

I fully believe every normal man has ability worth much more than he is now realizing on it—if he will but develop his mind to wrestle with the bigger problems of life. There are enough tickled to death to stay small, to clean gutters, and flash chimneys and such other repair work. It all comes around

again to the comparison of the automobile. Those who are prosperous buy new cars and keep them looking like they want their minds and lives to look, who are always first, just a leap ahead of the slower folks who cannot reach so far, but buy second-hand cars. This latter shows a vast difference in life—mostly in the use of the brain. The one grasps an opportunity and develops it, cashes in on it—the other fellow waits until the cream is skimmed off and then makes an effort, but he can only get skimmed milk. It keeps him alive, that is true, but it is not very nourishing and never makes a person alive to prosperity.

The commercial side of life affects us all and it is the scientific attitude that counts. Men, whether mechanics or shop owners, who are so saturated with a reactionary mental attitude can never ride in the middle of the stream of life where the masses of people do business. To ignore technical training is just as bad as to ignore salesmanship—for every sheet metal worker needs both. We need technical knowledge so we can cope with what the more advanced architects and engineers design and specify.

It is indeed wonderful to observe the many creations men have made of leader heads. In most instances we see more or less simple boxes—such that most any mechanic ought to be able to make—still a lot of small shops and roughing-in men are even afraid of them.

It is, however, on buildings with individuality where new, distinctive designs are made. Architects are fond of using stock designs as well as most tradesmen, and for ordinary work they simply tell their draftsmen to use the leader head from such and such a job. This is easier—there is no new mental effort to

do. But for a new college, church or seminary, club, etc., the leader head must harmonize with the rest of the structure.

The design we show at Fig. 1 is quite similar to a design used on a new Jewish temple. On this splendid architectural monument I believe the leader heads are totally out of harmony with the rest of the structure, but the masses of the people will never know the difference.

The heads are large—seem cumbersome when compared with the rest of the structure, and the general design of the building should have been embodied in the leader heads. Designing is by far the hardest accomplishment to acquire, especially to make something different than has ever been made. That is why the architects of the middle ages gained such lasting fame—they studied every part of the structure after the manner of the whole design. Architects today are too much crowded to do their best, and that is why certain trim as leader heads often suffer.

After the design is once fixed upon, it is a simple matter to develop the patterns and make the head. Take a problem as in figure 1, which is made up of a crown mould for the box and a tapering curved hopper. It is best to draw first a vertical line for the wall of the building, and then from it measure the projection of the top, also the width of the leader pipe. Next detail the mould as 1-2-3-7-9 to the shape you wish the box to have. After this sketch in the hopper position, as 11-16, giving it a suitable height and curve you think best.

Divide all curved lines in equal spaces, as the reverse Ogee and the hopper. This to locate points to work, after which number each point and bend as shown.

The front elevation can now be drawn working from the center line, giving the box the length desired, and make the height of each number conform with side elevation. By passing lines over from side elevation we thereby divide the front view in the parts shown.

Observe the box part of head forms a square miter, so that only a side elevation is needed. But since the hopper part of front is generally of different projection than the side and so the girth will vary. Hence it is better to detail the side elevation as we show it and at least a half elevation for front of hopper should be drawn. In this way we can use the crown mould pattern for the square miter for both sides, and the hopper patterns will be different.

But to develop the pattern for side, we pick the girth from 1'—16' of front elevation—picking each space separately and setting it down below the side elevation, as 1'—16'. Observe this is identical to a square miter pattern, and so by drawing stretch-out lines from each of these points we then drop lines of points from each point of side elevation. Where lines of similar number cross—there intersections are established and you can connect up these points to make the miter line as shown.

Notice how the front line butts into the side, and the side butts into the front. So the one fits against the other, and hence we develop the one from the other, and in this way eliminate the necessity of developing a modified profile. For this reason we pick the girth spaces from the side elevation as 1—16 and set it below the front elevation, and so develop the pattern in the usual way.

As most of our readers know, leader heads are more of an ornamental fixture to trim up the downspout and to aid in disposing of the air currents passing up the spout. But mainly it is ornamental, much like a sunflower when it blooms—it ornaments the tall stalk. On a building it serves a unique purpose, in that the leader head is a minor ornament to the main cornice, but still it must harmonize with it.

Overflow spouts as we show in our front and side elevations are used now and then, where pipes are apt to get stopped up with leaves, birds' nests, etc. By this means, the water will flow away from the masonry walls and not down alongside of it. To the right of elevation at Fig. 2 we show how to lay out overflows when of the design we show. It is best to use a side elevation and a plan view rather than a side and front view, because we can not get the girth for the sides in a front view. The side view, Fig. 2, is first detailed, giving it depth, projection and curvature as desired. Next work out the plan view, giving with it openings and curvatures of sides. This latter is sketched in free hand to give peculiar treatment desired.

After this the top of elevation is divided into equal spaces, and drop lines vertically so they pass through plan. Now then, 1—6 of elevation represents the girth spaces for top, and this is set on the extended center line of plan as 1—6. Drop stretch-out lines and then from each point of plan lines as between 1"—6" bring over lines to cut off those in stretchout of similar number.

Do likewise for the lower side and you have points established for setting out the pattern. The same procedure is followed for the bottom, where the girth 1'—6' is taken and set as 1'—6' in pattern. In this case we pick the widths from plan with dividers much the same as is done for elbows, and then transfer the widths into pattern.

To develop the sides, we pick the girth spaces from plan as 1'—6', each one separately, and transfer them on a line above side elevation as 1'—6'. Drop stretchout lines, and then from each point in the top and bottom line of elevation project lines into stretchout, thereby cutting off similar lines. This allows for tracing the outline of pattern through centers of intersections. Edges must be allowed extra.

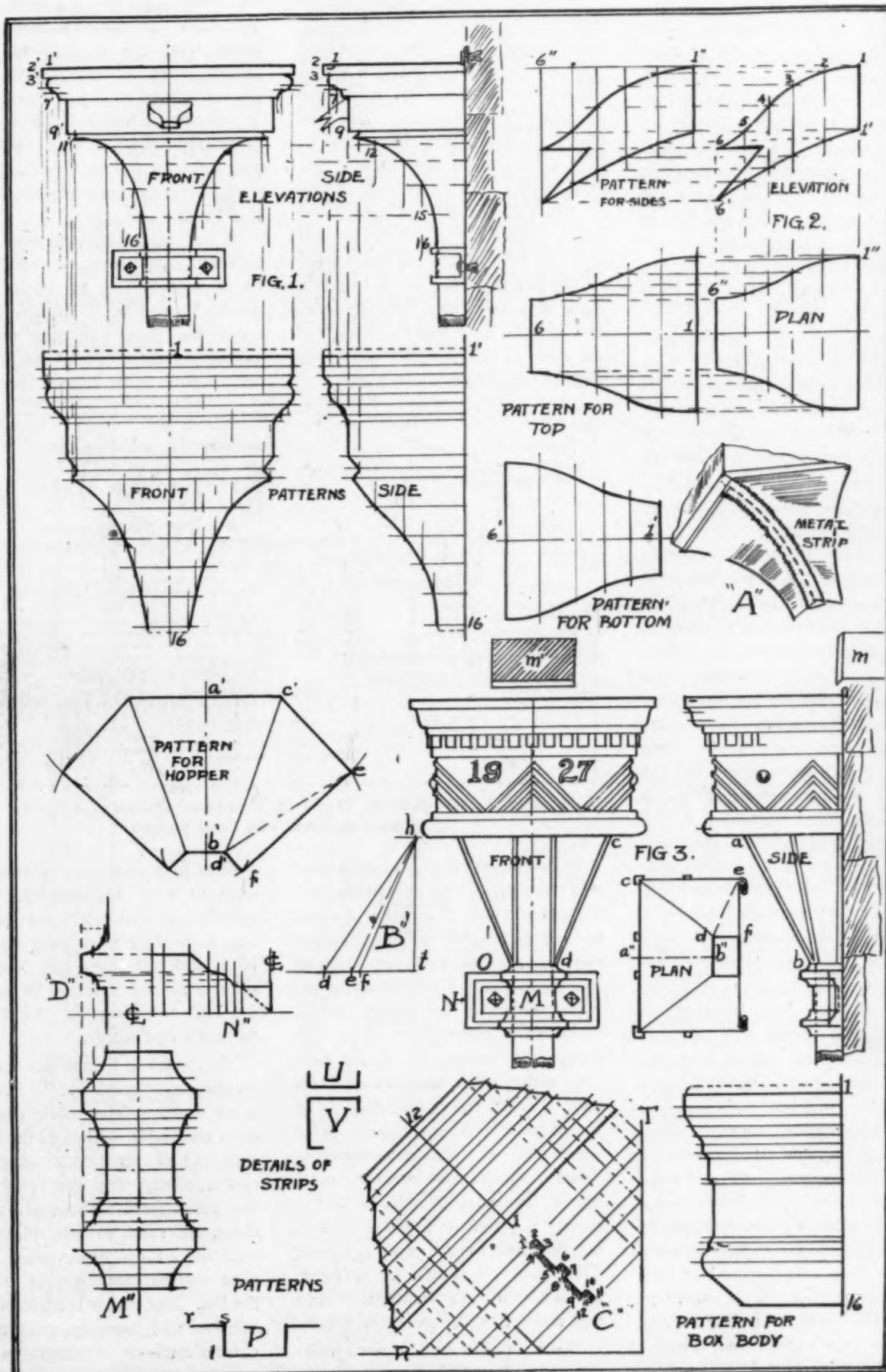
In some cases these overflows are planted on the crown mould without cutting the openings out, it is more for ornamental effect. In most cases

a rectangle hole is cut out, and the overflow is planted over it and soldered. The curved edges are butt jointed on the corners and soldered. However, in assembling the hopper of the leaderhead, the edges are butted together and soldered, after which a strip is planted in the corner as at "A" and soldered. This is a good reinforcement and is needed as a stiffener as well as a reinforcement. With galvanized iron for the head, then a zinc strip is best, but when the head is made of copper, the strip in the corner should also be copper.

Our leader head, Fig. 3, is a design used on a college building, and is very becoming for the position it occupies. Here plain surfaces are mostly used, having filleted members planted across them, thus causing a variety of lines on the design that would otherwise not be possible. The crown mould is of the Ogee type with a small dentil band underneath, while the panel portion is stripped with fillet members run diagonal. The hopper itself is plain but also stripped, so a right pleasing effect is produced. The pipe band is also panelled which all acts to produce a very interesting design.

On this problem we only need to lay out one pattern for the crown mould or box part. We divide each of the curved lines in side elevation into equal parts, and pick the stretchout and set off below as 1-16 in numerical order. After this the pattern is developed the same as any square miter. With the aid of this side pattern the front can easily be marked off.

A hopper of this kind can be easily developed by the projection method, similar to Fig. 1. But in this case we use triangulation, so the front and sides can be put in one piece. So we draw a plan view of hopper as shown, which gives the general proportions. We see the line a-b of side elevation is a true length, so this line as a-b can be set in pattern as a'-b''. Now we can pick the half length as a''-c of plan and set as a'-c' in pattern. Also transfer b''-d as b'-d', which gives our hip line c'-d' of pattern.



Leader Head Designs and Developments

Now the side wings are best developed by triangulation, especially the diagonal line d-e of plan. This we take and set as t-e of diagram "B" where h-t is the height, and this makes h-e a true length. By setting dividers to c-e of plan and using c' in pattern as center, strike small arc as at e'. Also pick the width of spout as d-f and set as d'-f'. Now pick true length as h-e from "B," and using d' in pattern as center, cross arcs as at e'. Next pick the side line c-d of front elevation or h-f of "B", and using e' as center cross arcs in point f'. This allows drawing lines through points where arcs cross and you have the pattern for front and sides. The back of hopper would be taken off as the front elevation shows.

The patterns for this hopper can be arrived at in several ways, as by projection, by the transference of angles, with the aid of a steel square or by triangulation as we show. I prefer this latter method as a person can see what he is doing and work over larger places. The strips for the corners and sides are merely details as at U and V, which are tacked in position with solder, since they have nothing to hold. For the body of box, the treatment as at "C" can be followed, where R-S-T is a right angle and "C" is the sectional view. The girth spaces 1-2-3-4, etc., are set off at right angles as 1-12 and the pattern is developed by projection.

Leader heads are generally supplied with a pipe from the roof gutter, others are built beneath an opening in a parapet wall as at m and m', and still others have the leader pipe passing right through the head. Each has their purpose, although the latter is strictly ornamental and is not serviceable as a hopper. Names and letters or numbers are often planted on leader heads, as initials of institutions, or of owners, number of year of erection, or such other record or emblem that may strike an owner or architect's fancy. In Fig. 3, we have the year represented, while a semi-sphere is planted in the bare space of the side view.

Spout bands are a great aid in setting out a wall and some are very complicated. At M we show one used now and then, where the mould around the spout has an extra cove as detail "D" indicates. The side wings of bands are bent straight back as the dotted lines show. This will require that the front and side of this mould wall are made separate, much like we show in pattern for M". Where the side miters to the flange O, an inside miter is made, or part of what falls off from M" may be used, only altering for the cove at the top and bottom to bend straight back.

are totally ignorant of their cost. We know of instances where the metal work on a building was figured down to cost, and the contractor offered to throw more highly ornamental leader heads in free. It is impossible to do a good job and still give it free. A thing that costs nothing is generally worth just that much.

In our day of high material costs and high labor costs, not much can be given away free any more. Most mechanics will not do an hour's free work for their employer without putting in their time. But the instant these folks invest their life



AFTER THE FLOOD —

NOAH'S FIRST ACT was to provide shelter for his family—a roof over their heads. Although times have changed since old Noah's day and though the country is dry (in one way) we still have rain and the undeniable importance of a GOOD WELL-KEPT ROOF remains.

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IN GOOD SHAPE



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In making the end piece N, a face miter is required as at pattern N". These two types of patterns are not so well understood by most tradesmen, but they are necessary, each in their own place. The common returns are more for corner bends, while face miters are more for panels, etc., miters that face a person, rather than turn away from one. Dentils can be designed as at P, where the dentils occupy twice the width of the space between. These dentils are merely metal blocks formed with sides as at s-t, having a bottom in and are planted on the bed mould, and soldered. The space v-s should be uniform, and it is best to cut small metal clips and insert them between the dentils.

Work of this kind is very interesting, and yet it is amazing to observe how some employers of shops

savings in a shop they immediately want to work for nothing. They actually pay customers for permission to do their work, they work till 10 o'clock evenings and Saturday afternoons and Sundays on many a job and never earn a cent for all the work and worry.

They console themselves they are building up "good will." But that is all wrong. The public does not want charitable work, and those that accept it ignorantly—they, of course, always feel they paid what was asked them. Those who are so cheap and small to defraud another man out of his living—they are a poor sort of customers to have on the list. But that is the life of competition and men ignorant of the correct methods of running a business and refusing to learn will soon put themselves out of business.

W. P. Thomas, Springfield, Missouri, Changes His Location

W. P. Thomas, formerly located at 915 South Broadway, Springfield, Missouri, has moved to 924 North Boulevard Avenue. Mr. Thomas says: "I would not give up AMERICAN ARTISAN for twice the price I pay for it, as I am a sheet metal worker and surely get some fine information out of it."

Sheet Metal Concrete Forms Supplanting Wood in Building Field

The ever increasing scarcity of lumber and the pressing demand for the saving of time in the construction field has brought the use of sheet metal products increasingly

into vogue. It has had the effect of teaching builders that sheet metal products can serve them in divers ways which they had not thought possible before their attention was called to it.

In the case of the reinforced concrete structure a way has been found by the Dowd Form Company, Builders' Building, Chicago, to supplant the old wooden concrete form with a sheet metal form that takes less time to erect and which leaves a much smoother finish on the concrete than is possible where the wooden forms are used.

These forms are so constructed that they are made to fit any size concrete post required. Their connections are all spot welded. Their erection is rapidly accomplished and

inexpensive when compared to the old way of making the wooden form. E. B. Dowd of the Dowd Form Company, says that the reduction in erection costs amount to 25 per cent under the same cost for the wooden forms.

Here is another way that sheet metal is taking the place of wood, and is doing a better job of the work to be done.

Barnes Zinc Line Acquired by St. Paul Corrugating Co.

The Barnes Zinc Products Company line has been taken on by the St. Paul Corrugating Company, according to an announcement just issued by M. V. Lux, president of the firm.

During July the business of the St. Paul company increased to the extent of approximately \$30,000 over the corresponding period of 1926, an indication of growing building activities in the Northwest.

Although a plant addition was recently installed by the St. Paul Corrugating Company, it is again crowded for manufacturing facilities.



Vacuum Furnace Cleaners

From Master Heating and Roofing, 8122 West Fort Street, Detroit, Michigan. Kindly advise us who manufactures vacuum furnace cleaners.

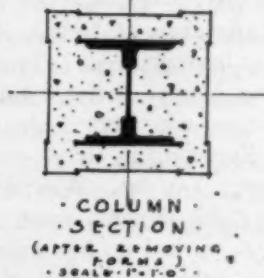
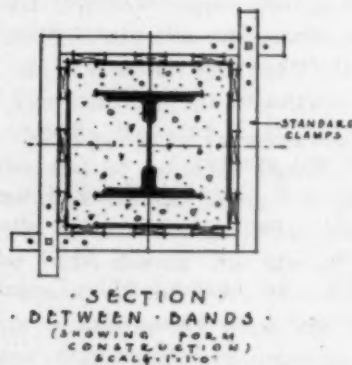
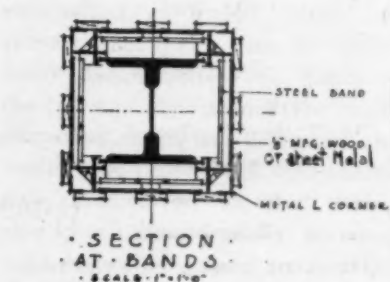
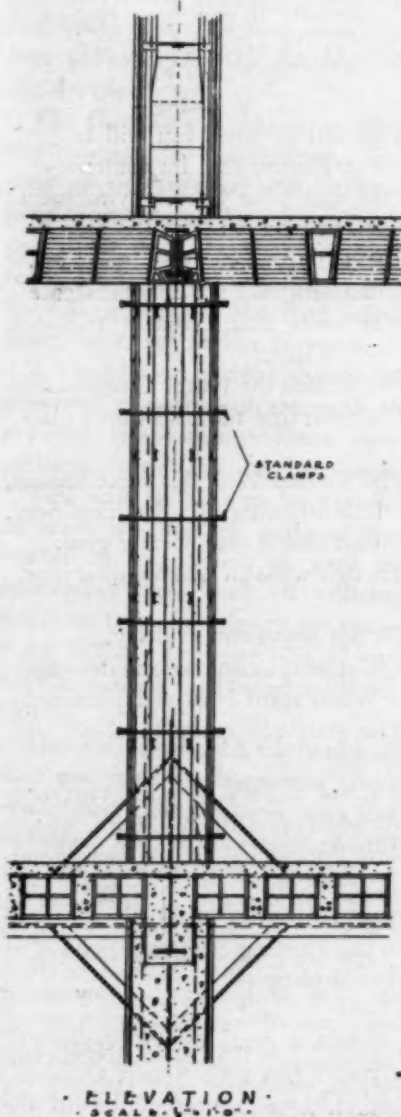
Ans.—Brillion Furnace Company, 3124 Park Avenue, Brillion, Wisconsin, and the B. F. Sturtevant Company, Hyde Park, Boston, Massachusetts.

Automatic Saw Filer

From John J. Walter, 601 East Market, New Albany, Indiana.

Please advise me who makes a machine to automatically sharpen or file hand saws, operated by electricity.

Ans.—Oliver Machinery Company, Grand Rapids, Michigan, and E. C. Atkins and Company, 402 South Illinois, Indianapolis, Indiana.



COLUMN FORMS
FOR
REINFORCED CONCRETE
CONSTRUCTION

Showing How Dowd Form Company Finds New Use for Sheet Steel in the Manufacture of Concrete Forms

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

I received on Tuesday of this week a metal ash or pin tray made from tin that J. C. Neuman, Springfield, Illinois, took off of Lincoln's home here. Mr. Lincoln had it put on before he was elected president of the United States.

"They tell a good one on Mr. Lincoln in these parts," said Mr. Neuman. "His home was a one-story structure. Once while he was off on one of his circuits, which often took him away for weeks, his wife had the home raised to a two-story house, and when he returned he stopped in front of his home and looked at it. Several of the neighbors watched him meanwhile to see what he would do. He called to a boy across the street and asked him if he knew where Mrs. Lincoln lived. That was too much for Mrs. Lincoln, who was also peeping out. She opened the door and said, 'You old fool, come in.' Lincoln tipped his hat to her and went in. The tin referred to was put on in 1858 and was taken off in 1901. I can't find a hole in it.

"Business is good," Mr. Neuman says, "but I am not quite over my sore foot and am using a cane that I made out of tin. I made it six-cornered and twisted it and it looks quite natty and has a 2-inch ball on it for a handle."

It was certainly very thoughtful of Mr. Neuman to send me that little tray and I appreciate it very much indeed.

* * *

Last Call

"William," said she, severely, "how many more times are you going to ask me to marry you?"

"Clare," said he, "I can't answer that question, but I don't think I'll bother you much longer. One of the other three girls I'm proposing to shows signs of weakening."

* * *

There was a fearful crash as the train struck the car. A few sec-

onds later Mr. and Mrs. Pickens crawled out of the wreck. Mrs. P. started to say something but her husband stopped her.

"Never mind talking," he snapped. "I got my end of the car across. You were driving the back seat. If you let it get hit it's no fault of mine."—American Legion Monthly.

* * *

Leave That to the Boss

The president of a large corporation had occasion to reprimand an employe for inefficiency, whereupon the inefficient one began finding fault with the organization. The president turned to the speaker:

"Are you the head of this corporation?"

"No, sir, of course not," answered the employe.

"Well, then," growled the president, "don't talk like a fool."

* * *

Low Finance

The scene was the editorial rooms of a morning paper, and the dramatic editor, who comes in after the day shift has gone, met a new face.

"Can you fix me with two bucks until pay day?" he asked. The request was granted.

"Who is that bird?" asked the dramatic man of the night city editor.

"He's the financial editor," was the amazing answer.

* * *

Modern Camping

E. B. Langenberg: Hello, old man; where have you been?

L. Wayne Army: Just got back from a camping trip.

E. B.: Roughing it, eh?

L. Wayne: You bet. Why, one day our portable dynamo went on the bum and we had no hot water, heat, electric lights, ice or radio for almost two hours.

* * *

Uncle Is a Wise Man

A little boy from Canada who had never seen a negro was riding

with his uncle in New York when he saw a colored lady.

"Why does that woman black her face?" he asked his uncle.

"That's her natural color," said the uncle.

"Is she black like that all over?"

"Yes," replied the uncle.

"Gee, Uncle," said the lad, admiringly, "you know everything, don't you?"

* * *

Swallow This

A Japanese firm will erect a monument "in memory of the oysters whose lives have been sacrificed for the pearls which have enabled the firm to prosper."

It is a considerate and a generous deed. One can imagine the emotions of the crowd at the unveiling, and one would travel far to be present. Particularly if they have engaged a clam as the principal speaker.

* * *

Will—ing

You will be what you will be;

Let Failure find its content

In that poor word, environment;
But spirit scorns it and is free.

It masters time; it conquers fate;

It cows that boastful trickster,
Chance.

And bids the tyrant Circumstance
Uncrown and fill a servant's place.

The Eternal Will, this farce unseen,

The offspring of a deathless Soul,
Can hew a way to any goal,
Though walls of granite intervene.

Be not impatient in delay,

But wait as one who understands,

When spirit rises and commands,
The gods are ready to obey.

* * *

I had a very pleasant visit with my old friend R. W. Menk, who is now established in his new headquarters with the Robinson Furnace Company. Rudy is the head of the Heating Systems Division of the company.

* * *

I took a great deal of pleasure in a visit I had with Robert O. Brannan, Chicago representative of the Warm Air Furnace Fan Company, one day this week.

Locating the Furnace, Cementing and Making Smoke Pipe Connections

Cementing Furnace an Exacting Job—All Air Except from Furnace Should Be Excluded from Chimney

By L. W. MILLIS*

Data Sheet No. 18

Locating the Furnace

Whenever it is practical to do so the furnace should set so that the warm air pipes will be as nearly equal in length as possible. If this cannot be done, care must be exercised to increase the size of very long pipes in accordance with the information in Data Sheet No. 10.

The location of basement garages, water heaters, laundries, stairways and fuel bins often affect unfavorably the location of the furnace.

The furnace should set as near the chimney as convenient. The user of the furnace will be happier if it sets so he is not compelled to duck his head to get from stairway to basement, and he will appreciate the fuel being near the front of the furnace.

A foundation should always be provided of sufficient strength to prevent the furnace from ever settling or getting out of plumb.

You will, of course, be careful to erect the various units of the heater in alignment, as well as exercising care that all collars, front castings and doors are carefully fitted. (Proper use of asbestos cement is treated in Sheet 19.)

The casing should be fitted so that air from the basement (carrying dust) cannot leak into the furnace. Portland cement should be built up around the outside of the base ring so no air can leak in.

*These are "Data Sheets" Nos. 18, 19, 20 and 21, by L. W. Millis of the Warm Air Study Club, The Security Stove & Manufacturing Company, Kansas City, Missouri, and comprise the 18th, 19th, 20th and 21st of a series of articles designed to interpret the findings of the University of Illinois Research Staff on warm air heating in the language of the workmen. These articles will be published later in pamphlet.

That portion of the base under the ash pit door should be carefully cemented to stop air leaks, but care should be taken to not interfere with the free movement of the ash pit door.

Any portion of the base ring concealed by return air boots or shoes, should be made air tight as well as the joint between the casing and the bottom of the boot or shoe of the return duct. Such air leaks as these, if permitted, will give the best of furnaces a reputation of being dirty, although the real cause is "shiftless" installation. The joints in the front of the furnace, the joints at casing rings, the collars of the warm air pipes and the smoke pipe connection at the casing should all be carefully stripped with asbestos paper to prevent air, either clean or dusty, from leaking into the casing.

Data Sheet No. 19

Cementing the Furnace

Most warm air furnaces require the use of asbestos furnace cement at various joints. If properly cemented such joints should be tight during the life of the furnace. If the work of cementing is improperly done, the furnace may require remounting after only a year or two of service. In such cases the cement will be found to have disintegrated sometimes into a comparatively fine powder. The installer may declare it is due to poor cement. It is, however, almost certain to be caused by improper application.

Before applying cement to any metal, be certain the parts to be joined are clean. If oil or grease is on the metal, douse your lighted rag and use gasoline on the metal. Every kind of dirt, such

as rust or dust or moulding sand, must be removed.

After all joints are thoroughly prepared, put a small amount of cement in the putty race and spread it carefully so that there is a priming coat adhering very closely to all the inside part of the race. If the casting is not clean, the cement will have a tendency to "roll up" away from the metal. Do not thin the cement with water or anything else. After the priming coat is in place, fill the race with cement, taking great care to leave no air pockets either large or small in the cement. If there is air in the cement when it is heated, the air will expand and rupture the cement.

After the race is filled as described, set the casting or metal part that goes into it carefully in place and allow it to settle or else push it down until metal touches metal. Do not twist it into place, as that will prevent a good joint. As soon as the casting is well seated, smooth off the cement on both sides of the casting. Bring it to a beveled edge at the (clean) casting. Treat every cemented joint in the same manner no matter how small it may be or whether it is a main joint, door frame, cleanout connection, smoke connection or some other smaller joint.

As soon as the smoke pipe is connected up, a light fire should be made in the furnace. A few papers, followed by a very little wood, will answer. Do not allow it to become hot enough to generate steam in the cement. The mild heat should warm the water already inside of the cement and drive it out slowly. If the fire is hot enough to make even a very little steam, the cement will swell

and will be porous, weak and liable to leak gas.

The method of application of cement and of drying will determine whether the cement will be found years later solid or in the form of powder.

Data Sheet No. 20

Smoke Pipe and Connections

In Sheet No. 18 I mentioned that the furnace should "set as near the chimney as is convenient." If the draft of the chimney is weak, the distance should not be over five feet. However, it sometimes happens that the chimney must be farther away.

If the draft of the chimney is strong and the basement deep enough to allow a good upward pitch, the smoke pipe may be as long as fifteen feet. If it must be longer, I suggest increasing the diameter of the pipe two inches, using a taper piece at the furnace. This will allow the use of a larger smoke pipe than otherwise.

If any portion of the smoke connection at the furnace is inside of the casing, be certain that asbestos cement is used so no smoke leak can occur. If a "saddle" or "side" check is used and a "turn" damper is put inside of the pipe, be sure the turn damper is between the furnace and the check.

If an end check is used in connection with a tee, the tee should be long enough to install the "turn" damper between the furnace and smoke outlet of the tee. Never put the turn damper between the chimney and the check. It is often necessary to jump the smoke pipe up at furnace in order to get head room; but the fewer ells or angles there are in the smoke pipe the better the chances of obtaining a satisfactory "draft."

It is, of course, true that the owner of the house supplies the chimney, but the success of even the very best heating plant depends upon the chimney and upon the connection of the smoke pipe to the chimney.

Therefore, it will be well for you to go out of your way to be sure that the connection is right. If you provide a thimble you should roll a bead on the inside at far end (or rivet lugs inside), so the smoke pipe cannot be pushed too far into the chimney. The thimble should be cemented into chimney perfectly tight. It may be necessary to make the thimble anywhere from eight inches to thirty-six inches long. Do not depend on a hole in a foundation wall to form a connection between your smoke pipe and the chimney.

Data Sheet No. 21

Smoke Pipe and Connections,
Continued

Do not cement the smoke pipe into chimney without a thimble. The expansion of the smoke pipe will ruin the cement connection. Always provide a thimble so the pipe can slip in and out as it expands and contracts.

If the chimney is tile lined and has air spaces between the tile and surrounding brick or stone, be sure to push the cement into the spaces so neither air nor smoke can start up the outside of the tile.

Put the thimble in the side of chimney that is nearest furnace and avoid elbows. If the flat side of tile is nearest, use a round thimble. If the short way of the tile is nearest, the thimble should be made in the form of a rectangle to round. The rectangle should be as wide as the short way of the tile and high enough to equal the area of the smoke pipe. This will be better than using an extra elbow. Every elbow cuts down the draft.

Every little opening in the brick work of chimney or cracks in joints or seams of pipe or elbows should be closed up. No air should get into the chimney except as admitted intentionally through the coal or through the check.

Heat from the smoke pipe is often a menace. If any wood is within fourteen inches of the smoke pipe, the wood should be

protected by either galvanized iron or by tin. (Never by black iron.) The protection should be as long as twice the diameter of the pipe and should be fastened in such manner that a free air space of two inches, or more, will be between the wood and the metal.

"Radiant" heat "shines" in every direction from the smoke pipe. It does not heat the air through which it passes, but it heats the things it "shines" on or strikes. The air touching the heated thing is warmed and expanded. It rises, and in doing so carries the heat (or wipes, or scrubs, the heat) from the heated surface. The heat is thus carried away by the air and in this case dissipated into the basement.

A thing does not need to be red hot to give off radiant heat. It begins to radiate as soon as it is warmed. It can, by air movement, be carried away, conveyed away or (remember the term) convected. We often say "changed into convected heat."

I might here remark that the success of any warm air heating system depends upon the furnace man's ability to change the radiant heat of the heater itself into "convected" heat and carrying it to the place it is needed, as well as his ability to prevent the radiant heat from becoming a source of danger from overheating some spot and thus starting destructive fires. The smoke pipe should be securely fastened so that expansion and contraction cannot open up joints, also so it will not be easily knocked down or blown down in case of an explosion in the furnace.

Who Makes "Magic
Fire Kindler"?

TO AMERICAN ARTISAN:

Please advise us who manufactures "Magic Fire Kindler," supposedly a pitch preparation for easy starting of fires.

"Forshaw" of St. Louis, 109 North 12th Street, St. Louis, Missouri.

Waving Flag in Furnace Display Window Sells Heating System

Frantz & Luppold, Reading, Pa., Employ Scientific Principles in Selling Warm Air System

THE employment of scientific merchandising methods is making important strides in the retailing of warm air heating plants. Warm air furnace installers who have any desire at all to be of service to the community in which they reside and incidentally to make money while doing it are rapidly adopting methods of merchandising which have proved their powers to attract trade into their stores.

Frantz & Luppold, 1207 North 11th Street, Reading, Pennsylvania, have had the fact that a window display of warm air furnaces staged along scientific lines does bring business into their store.

The accompanying window display of that firm is one which they have employed very successfully during the late summer and early fall of this year.

E. I. Kurr, Heating Engineer for Frantz & Luppold, has given the

following description of the window and what it did toward increasing the firm's business:

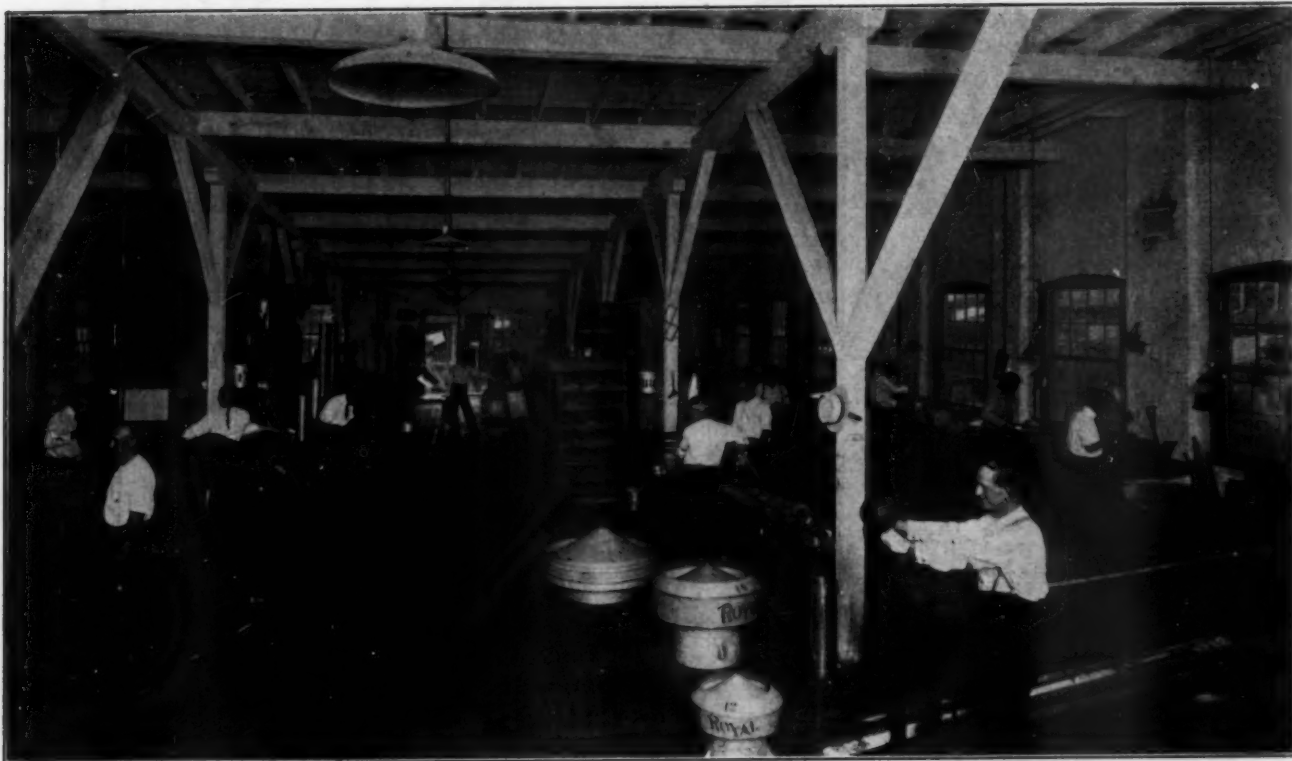
"You will notice that we are featuring two different makes and types of warm air furnaces, the Round Oak and the Andes. The reason for this is that about 50 per cent of the basements in the older houses are only 6 feet and even less in heights and in order to install a system without pitting, which is often impossible on account of springs close to the surface of the basement floor, we recommend the Andes, as this furnace cased is one foot lower than the high type furnace of same firepot area. This low type is also a big factor as far as getting sufficient pitch is concerned.

"Starting from the extreme left of the window you will notice the Standard Code emblem which distinguishes us as a Code dealer and installer. The Round Oak, as you

will notice, is shown as a semi-skeleton set-up showing the castings and inner casings. This furnace is painted a straw color with tobacco brown trimmings; the lower casing being a bright sheet of galvanized metal, gives it a very pleasing color combination. At night we have a large spotlight focused on furnace through an amber colored lens, which gives the furnace the effect of being gold-plated. You will notice that an automatic humidifier is very much in evidence, and the petite little cardboard lady is calling attention to the value of relative humidity by pointing directly to it and holding a brown sign with gold letters which reads: 'This is the automatic humidifier which keeps the doctor and furniture repairman away.' This lady has on a blue dress and has brown hair, a pleasing background for the brown and gold sign—'Sticks out like a bouquet of



Window Display of Frantz & Luppold, Reading, Pennsylvania, Which Produced Excellent Results for Its Firm. The Placard Which the Young Lady Holds Calls Attention to the Automatic Humidifier on the Furnace



Interior of the Work Shop of Frantz & Luppold, Reading, Pennsylvania. The Gentleman in the Left Foreground Is the Senior Member, H. W. Frantz. The Little Fellow in the Left Center, Bending Forward, Is the Junior Member, C. F. Luppold, While E. I. Kurr, Heating Engineer, Is the First Fellow at the Vice Bench on the Extreme Right.

orchids.'

"The registers seen in the front and background are finished in white, brushed brass and oxidized copper. The water pan and humidifier bowl, as well as the pitted ash pit, are kept filled with sparkling clean water and to call the passerby's attention to same we have several highly-colored celluloid toy ducks floating on this water.

"The Andes is fully equipped and installed to show a mechanical or forced air installation. You will notice the square and rectangular ducts leading off of the top of the furnace and the return duct and fan chamber leading into the right lower side of the casing.

"The return air duct faces the side window and is sloped so an outsider can see the fan operating through a Tuttle and Baily tanbo antique cobble face.

"You will also notice an electro-ozonator attached to the return duct just back of the fan. We keep this ozonator and fan running, and thus are able to demonstrate the value of a fan job as a ventilating unit in summer time. I might also

say that it keeps our window from frosting in winter time.

"Since this picture was taken we have attached four 8x10 silk flags to the openings of the warm air ducts and their waving and fluttering in the breeze caused by the fan has brought in many curious people who wanted to know what made them wave as in a gentle breeze.

"The writer has personally sold one of these curious minded people who otherwise never would have been interested in warm air, quoting his own words. He was sold on the ventilating feature as well as the recirculating moist air heating feature.

"This furnace is equipped with a Haynes automatic humidifier, and the cast parts are all enameled in battleship gray and trimmed in vermillion.

"Both furnaces are equipped with hot water heaters for the domestic boiler.

"The inside of the firepots and domes are painted a bright red, which is intensified with large red electric bulbs which are lit all night and reflect a bright red to the pave-

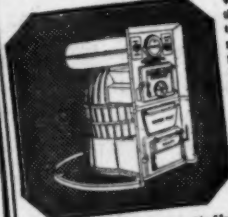
ment outside. They attract people from across the street.

"All in all, our window has been a money maker and a silent salesman; after all, that's what we are paying window rental for, commercially speaking, so why not make good use of same? The old adage, 'Judge the inmates of a home by the appearance of their yard,' can be applied to mean, 'Judge the business man by the appearance of his window.'

In their newspaper advertising, too, this progressive company has mapped out a consistent policy, and their ideas on what good warm air heating advertising is can be gained from a glance at the page of specimen ads used in the Reading, Pennsylvania, Times. Here again we will allow Mr. Kurr to tell you in his own words how and why these advertisements have pulled business:

"It is my opinion that the majority of advertising copy compiled by the manufacturers is too stereotyped. The advertisements are written by an expert, no doubt, but by a man schooled in the wholesale way of advertising and, being hundreds

WHY FRIENDSHIP IN BUSINESS?



We believe that the public is entitled to a quality product, honestly priced, designed to render a service, skillfully installed at an investment that will enable us to meet any of our customers on the street with our heads up.

Our Round Oak Warm Air Heating Systems have healthfully heated homes with surprisingly small fuel bills.

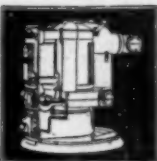
Our salesmen are Warm Air engineers, educated in the method of Moist Air Heating and advised them for you figure your heating problems and solve them for you through the health and welfare of your family in view through the coming years—nobody you are entitled to this condition without expense or obligation on your part. When we call at your convenience to discuss this important matter of heating your home?

OF COURSE WE WILL RECOMMEND THE ROUND OAK IRONBILT HEATING SYSTEM—“AMERICA'S STANDARD OF VALUE.”

FRANTZ & LUPPOLD

22 NORTH NINTH STREET
Bell Phone 4063-R

Your Present System Can Be Replaced With the FINEST FOR BEST RESULTS



Plan your complete System of WARM AIR HEATING when you plan your house and FOR THE SAKE OF ALL THE TOMORROWS SPECIFY A FRANTZ & LUPPOLD (Guaranteed) System of Warm Air Heating (22 yrs. of experience)

Your Architect or Doctor Will Tell You That Warm Air Heating is The Best for Every Home

When properly installed in accordance with THE STANDARD CODE, OUR WARM AIR HEATING SYSTEMS are the cleanest, most comfortable and healthful heating systems in existence. WARM AIR is the only system by which the air condition in the home can be regulated and kept under constant control. It is the only system that ventilates as it heats, circulating and maintaining a constant movement of air throughout the entire house. It is the only system that automatically supplies the correct amount of moisture to the air (the NECESSARY TO GOOD HEALTH). WARM AIR IS THE ONLY HEATING SYSTEM THAT SUPPLIES THE THREE ESSENTIALS TO COMFORT—HEAT, HUMIDITY AND VENTILATION.

A WRITTEN GUARANTEE With Every Installation A YEAR'S TIME TO PAY

Frantz and Luppold

22 NORTH 9TH ST. 22nd and Washington
2215 N. 11TH ST.

Mail Coupon Below for Information on Advanced Warm Air Heating According to THE STANDARD CODE

FRANTZ & LUPPOLD, 22 NORTH NINTH ST.

Please send me information about Advanced Warm Air Heating according to THE STANDARD CODE

Name _____ Address _____

The Best Argument for the Re-circulating Moist Air

Quoted from a Recent Bulletin Prepared by the National Tuberculosis Association.



"There is a logical reason why the atmosphere of a room in which no outdoor air is circulated becomes uncomfortable and dangerous. The reason is that the air in such a room is too warm and too still. In warm, still air the body cannot easily get rid of the heat which it is constantly creating. In the effort to keep cool the blood vessels of the skin and of the nose and throat become congested and the brain and other internal organs are robbed of their blood supply."

INVESTIGATE THE ROUND OAK MOIST AIR (For Hot Air) SYSTEM OF HEALTHFUL HEATING, endorsed by the Medical Profession and GUARANTEED by us under the CODE INSTALLATION.

Frantz & Luppold
22 NORTH NINTH STREET

"WE DO IT RIGHT AND GUARANTEE IT!"
Our Engineering Dept. at Your Service



This Symbol is Your Protection

TAKE A PENCIL AND FIGURE IT OUT!



That's what our Engineers do when we sell you a Re-circulating Warm, Moist Air Heating System.

The Hit and Miss Method of installing Heating Systems is similar to The Hit and Run method of driving—ROUND TO GET YOU INTO TROUBLE.

All our Warm Air Heating Systems are built into your home in strict accordance with the STANDARD CODE and when the job is completed, our Guarantee Covers Your Dollars.

Think this over—figure it out—give us a ring and let us help figure your heating problems.

WE ARE AS CLOSE TO YOU AS YOUR TELEPHONE

FRANTZ & LUPPOLD

—Round Oak Folks—

FOLKS, DO YOU KNOW—AN OUNCE OF PREVENTION MAKES A COMFORTABLE WINTER?



Your doctor will tell you—Moist, Warm Air Heat Is the Best for Any Home.

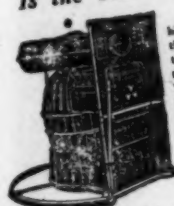
In this case, the ounce of prevention is an estimate from us to replace the old furnace in your cellar with a new ROUND OAK re-circulating, ANTEE OF COMFORT AND SATISFACTION. It is wise to arrange for that replacement now, even though you might not want the actual work to begin until later.

Our heating expert is at your disposal. He will explain the wonderful ROUND OAK System, plus our method of INSTALLATION, without any obligation to you.

Won't you arrange for a visit some evening?

FRANTZ & LUPPOLD

Do You Know Procrastination Is the Thief of Lives?



The wise runner leaves his mark at the crack of the gun. The wise doctor starts his treatment at the first sign of trouble. The wise home owner is the one who has that new Moist Warm Air Heating System installed now when our men are available and we can render the utmost in service.

It is also wise to remember that no matter "what" or "whom" heating system you buy you simply must pay three costs:

The Cost of the System
The Cost of Fuel Used
The Cost of Repairs

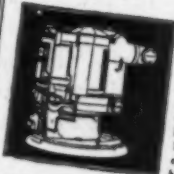
Now seriously add all these to see what it costs to heat YOUR home. Now folks, if (quote we said it) one certain system plus the two other costs actually totals in 11 years less than the cheapest furnace in the world, and if you get the most healthful, safe, clean and easy to operate one—the ROUND OAK—would it last 4 times as long—WHY CONSIDER ANY OTHER? Soundly thought—don't it?

If you are going to build or replace your present system, and do so at a total cost, please us for an evening's chat at your home. No expense or obligation to you, and you will learn true facts without any EXTREME claims whatever.

FRANTZ & LUPPOLD
Office and Salesroom: 22 North 9th St.
PHONE BELL 602-R

"Why Do We Keep 30 Street Head Men Busy the Year Round?"

Who Do You Want To Be Responsible For Your Safety And Comfort-- The Manager Or The Owner?



When you live, in the light of more than a fifth of a century home heating experience, accept your order to build into your home, new or old, the kind of Heating System you want, we back it with OUR BUSINESS and OUR HOMES. No chance to evade 10 years from now—For everything we own is here, has been and will be.

WE PLEDGE TO YOU, SIR, WE PLEDGE TO YOU, MADAM, THAT WE WILL REFUSE THE CONTRACT TO HEAT YOUR HOME MORE SATISFACTORILY AND ECONOMICALLY UNLESS WE KNOW WE CAN DO SO. THEN WE'LL GIVE YOU A GUARANTEE THAT IS AS GOOD AS THE SUM TOTAL OF OUR RESOURCES, PLUS OUR HONOR AS BUSINESS MEN AND FAMILY HEADS.

Of course, we will recommend ROUND OAK, AMERICA'S STANDARD of value since you were tiny children.

Now we talk this over to your honor? What evening is convenient to you?

WE ARE AS NEAR TO YOU AS YOUR PHONE

FRANTZ & LUPPOLD
OFFICE AND SALESROOM



Would you buy a pair of No. 6 shoes to wear on a pair of No. 8 feet?

We refuse to install an UNDER-SIZED Heating System in your home because we want to heat your home comfortably, the way you want it heated, the way it should be heated.

If for some reason we cannot guarantee the installation we will not make it at any price.

Is this not a definite assurance to the prospective buyer, that what he pays for he will receive?

Our installations of the genuine Round Oak Moist Warm Air (not hot air) Heating Systems are tailored to your house to fit, as we install only in accordance to the STANDARD CODE.

If you wish our engineer to explain our System of Installation in detail call Bell 4063-R for an appointment at your convenience without reservation.

DO YOU REALIZE HOW OUR DOUBLE RESPONSIBILITY PROTECTS YOU?



When you buy a heating plant from a DISTANT manufacturer through a BRANCH MANAGER, you are dealing with an institution, not with an individual. The MANUFACTURER'S REPRESENTATIVE is here today and gone tomorrow; not a permanent resident of our city.

It's different when you purchase a genuine ROUND OAK MOIST, WARM AIR (Not Hot Air) HEATING SYSTEM from your ROUND OAK DEALER, FRANTZ & LUPPOLD. You are then protected by DOUBLE RESPONSIBILITY! You are THE DEALER and OUR PERSONAL RESPONSIBILITY to us as ability to YOU. THE manufacturer guarantees the SYSTEM and WE guarantee the INSTALLATION. DO YOU REALIZE WHAT THIS DOUBLE GUARANTEE MEANS TO YOU? Call 4063-R and let our engineer explain our system.

FRANTZ & LUPPOLD
22 North Ninth Street

DO IT NOW—Call Us Up Today

of miles away from the dealer, does not know the character nor peculiarities of the retail trade in the respective dealer's locations. The writer believes that the printed page should be as nearly like as possible—the verbal sales talk. Human, conscientious, and in a language the prospect being appealed to can understand.

"In compiling these advertisements, I had in mind two things: first, to write a copy with a human interest appeal; second, to write a copy different from any other heating ad ever published in our local papers. Individuality, being different, was the keynote of these advertisements."

There is no question about these advertisements, the window displays, and the other progressive business getting practices of this firm pulling business. They do pull

business. As a consequence, since 1921 this firm has increased its working force from 15 to 35 men.

An examination of the advertisements shown in the accompanying illustration will be very helpful to other warm air furnace dealers who are interested in increasing their business. These specimens shown are only a few picked at random from a group now in the office of AMERICAN ARTISAN. Anyone desiring to see the entire group can do so by dropping into our office.

"Let your window reflect your business and its personnel—Dress up, doll up—It pays."

Don't forget that the Illinois Sheet Metal Contractors' Salesmen's Auxiliary is preparing to offer another series of prizes for the best sheet metal and warm air heating window displays. Watch for dates.

Stark County, Ohio, Fair Gives Furnace Men Many Sales

Tests on Agathon Coke Also Create Much Interest in Warm Air Heating

THE accompanying illustration is that of a display at the Stark County, Ohio, fair staged jointly by the Agathon Domestic Coke department of the Central Alloy Steel Corporation and the A. H. Robin-

son Company, Massillon, Ohio.

The A. H. Robinson Company recently ran some tests on Agathon Coke. In the illustration the large furnace shown in the extreme left is the one that was used in making

these tests. During the entire time of the fair the furnace was kept fired with Agathon coke.

A practical demonstration of the smokelessness of the coke was thus obtained. At the same time that this demonstration was in progress the furnace was also equipped with a Robinson heat distributor. The opening in the furnace casing just above the fire door aided the demonstrators very materially in allowing those interested to see just how the fan works.

The display was very popular during the entire fair and the company was well repaid for its effort by the large number of prospects which resulted in sales.

Immediately after the Central Alloy Steel Corporation had begun calling the public's attention to Agathon coke, the A. H. Robinson Company determined to test the fuel in their own furnaces. The furnace mentioned above was filled with Agathon coke. The fire door, the ash pit, and the grate shaking lever were sealed with wire, and the furnace left to maintain the fire as long as it would. "Forty-eight hours and twenty minutes later," said G. E. Robinson, "there was still sufficient fire in the furnace to ignite the new fuel added when the seals were broken. This fact was made known to the public through an advertisement by the Central Alloy Steel Corporation which contained a letter from the A. H. Robinson Company telling about the tests that had been made. Here is an excellent example of the way in which some firms take advantage of their opportunities to acquaint the public with their products.

Official Furnace Measurers Making Good Progress

The two official warm air furnace measurers, F. A. Sutherland and J. F. Quereau, of the National Warm Air Heating and Ventilating Association, continue to make good progress as rapidly as possible. They will serve all members of the association who have requested this



Joint Display of A. H. Robinson Company and Central Alloy Steel Corporation Staged at Stark County, Ohio, Fair Recently

service. All will be reached in due time.

The data they obtain is confidential with them and will be ready for distribution about December 1st, according to Secretary Allen W. Williams. Each member will receive the measurements of his own

furnaces only.

If you have not requested measurements, and wish this service which is done at cost for members, please advise Secretary Allen W. Williams, as the official measurers are not to be constant employees of the organization.

Indiana Warm Air Heating and Sheet Metal Men Start Membership Campaign

New Arrangement of Associations Insures Undivided Cooperation from All

A MEMBERSHIP campaign has been inaugurated by the Indiana Warm Air Heating & Ventilating Association and by the Sheet Metal Contractors' Association of Indiana. The two organizations, instead of working at cross purposes, will work in conjunction with each other and with the Indiana Fur-Mets.

The central office of the organizations has worked out several means of attracting members by making the membership so valuable as to appeal to the business judgment of the contractor. The appeal of good fellowship, general promotion of the interests of the trade, and the convention, free banquet and entertainment, are of course not to be neglected, but the addition of certain business elements will serve to interest the practical minded contractor whose primary outlook is for the more substantial phases of organization.

Principal among these is the matter of insurance. It is well known that the sheet metal trade is a preferred risk, but getting the advantage in rates that their class of risk should entitle them to is a hard matter for the tinner and furnace man. There seems to be only one way, and that through the insurance companies organized for this specific purpose. The Hardware company has consented to issue insurance to the Indiana tanners and furnace men, which will result in a saving for them of 50 per cent on fire in-

surance, 30 per cent on compensation and substantial discounts on other lines. This service will of course be open only to members in good standing.

Another service which is of value to many members is the cost and estimate sheets. These are printed in quantity, then distributed at cost. Information as to their proper use is also furnished free.

In order that contractors will not hold off until the beginning of the fiscal year before joining, the directors have voted to include for one year's dues, the entire year of 1928 and the last three months of 1927. They also have made optional with any member the payment of national dues, so that in case of state membership only, the dues are \$7.00 per year.

New application cards are being distributed, having on the back the following:

Advantages to Members

1. Good fellowship.
2. Rubbing elbows with your competitors.
3. Eliminating cut-throat competition.
4. Helping to educate your competitor who does not know how to figure.
5. Helping you keep up to date yourself.
6. A good convention with free registration (members only).
7. A free banquet and entertainment (members only).
8. A saving of 20 per cent on

compensation insurance (members only).

9. A saving of 50 per cent on plate glass and auto insurance (members only).

10. A saving of 25 per cent on burglary insurance (members only).

11. A saving of 50 per cent on fire insurance (members only).

12. Cost and estimate sheets at cost, with free information as to use them (members only).

13. A lot of other valuable things which will put money in your pocket.

The Sheet Metal Contractors' Association of Indiana and the Indiana Warm Air Heating and Ventilating Association have set the date of their joint convention for January 24-25-26, 1928. This brings it on Tuesday, Wednesday and Thursday of the week immediately preceding the convention of the Indiana Hardware Dealers. It is known that a number of exhibitors at the hardware convention would like to exhibit at the sheet metal convention, and it was at their suggestion that the date was fixed. While the personnel of the convention are entirely competent to grasp abstract ideas and to digest facts and figures put before them, there are many details of construction and design that cannot possibly be covered by the convention program.

The exhibit gives the manufacturer an opportunity to get the advantages of this product before those of the delegates who are interested in a manner equaled by no other medium. And the delegates themselves like it because it saves them time, enabling them to see at a glance just what is new and what it does. The unanimous opinion of the officers and directors was that a good exhibit would double the interest of the average delegate in the convention.

No registration fee will be charged against members, and the banquet and entertainment also will be free to all members. The Fur-Mets have indicated that they will take charge of the banquet and entertainment, and if they do those in attendance are in for a treat.

**Meyer Furnace Company
Peoria, Issues Engineering
Supplement to Weir Book of Facts**

The Meyer Furnace Company, Peoria, Illinois, manufacturers of the Weir furnace, have recently compiled and issued what they term the Engineering Supplement to the Weir Book of Facts, their catalog No. 21.

This engineering supplement first of all contains the Fourth and latest edition of the Standard Furnace Code. The compilers of this supplement have gone a great deal farther than merely to present the Fourth edition of the Code, however. They have presented the Code in a way that the furnace installer can easily understand its various provisions; they have given examples showing how to apply the Code in every detail, so that any man knowing anything about the warm air heating industry at all will be able to understand what is being talked about.

Numerous tables for the convenience of the installer are included in the supplement. For instance, there is a table of Weir furnace ratings, a table of glass surfaces, a table of exposed wall surfaces, cubical contents tables for 8½-foot and 9-foot ceilings.

An entire page of the book is given over to the important subject of chimneys. There are eight points mentioned which every construction engineer and warm air furnace installer should know before he attempts to put in a warm air heating plant. Here again tables are given showing the size the chimney should be in both round and square construction for a furnace having a certain given warm air pipe capacity. The heights which the chimney should extend above the grates are also given.

Correct and incorrect methods of connecting water heating devices are shown, making the supplement a convenient, comprehensive, informative and consequently useful messenger for you to have within reach at all times.

It can be had by writing to the Meyer Furnace Company, request-

ing the Engineering Supplement to the Weir Book of Facts.

**Statement of the Ownership, Management, Circulation, Etc., Required
by the Act of Congress of
August 24, 1912,**

Of American Artisan and Hardware Record, published weekly at Chicago, Illinois, for October 1, 1927.

State of Illinois, County of Cook—ss.

Before me, a Notary in and for the State and country aforesaid, personally appeared Etta Cohn, who, having been duly sworn according to law, deposes and says that she is the Business Manager of the American Artisan and Hardware Record, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, American Artisan and Hardware Record, Inc., Chicago.

Editor, George J. Duerr, Chicago.

Managing Editor, none.

Business Manager, Etta Cohn, Chicago.

2. That the owner is (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concerns, its name and address, as well as those of each individual member, must be given.)

American Artisan and Hardware Record, Inc., Chicago.

Charles W. Spofford, Evanston, Illinois.

Frank McElwain, Chicago.

Etta Cohn, Chicago.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) There are none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person, or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is—. (This information is required from daily publications only.)

ETTA COHN,

Business Manager.

Sworn to and subscribed before me this 1st day of October, 1927.

(Seal).

SARAH B. BOYNTON.

(My commission expires October 16, 1928.)

**Program of Metal Branch
National Hardware
Association**

**Tuesday, October 18
2:00 P. M.**

Ohio Avenue Hall (Lower Lobby
Blenheim, Atlantic City, N. J.).

Opening Remarks—Chairman F.
O. Schoedinger, Columbus.

Address—The Present Position
of the Sheet Steel Warehouse Distributors. Walter F. Doxsey, Editor, Daily Metal Trade, Cleveland.

Remarks—More Effective Cooperation Between Mills and Distributors. Walter C. Carroll, President, National Association of Sheet and Tin Plate Manufacturers, Pittsburgh.

Report of Committee on Mill Direct Shipments. Robert H. Lyon, Chairman, Lyon, Conklin & Co., Baltimore.

Report of Terne Plate Simplification Board of Review, L. D. Brueckel, Chairman, Weirton Steel Company, Weirton, West Virginia.

Discussion—Conditions Among the Distributors of Sheet Metals. C. F. Barker, Lamb & Ritchie Company, Cambridge, Massachusetts.

Report of Eaves Trough and Conductor Pipe Board of Review, Louis Kuehn, Chairman, Milwaukee Corrugating Company, Milwaukee.

Report of Sheet Steel Simplification Board of Review, Walter C. Carroll, National Association of Sheet and Tin Plate Manufacturers, Pittsburgh.

Address—How Can the Distributor of Sheet Metals Secure a Larger Volume? S. A. Knisely, Director of Advertising and Publicity, Sheet Steel Trade Extension Committee, Pittsburgh.

Signs of Improvement Appear in Iron and Steel Movements

Buying Light on Some Nonferrous Metals — Prices Drop on Tin

WHILE the whole iron and steel movement is not yet what it should be, signs of improvement appear, and the outlook for fourth quarter is more promising. Automobile and car foundries are melting pig iron at a slightly faster rate than they did in September, and finished steel demand is accelerated, due in part to moderate revival in rail and structural shape business.

Since 1923 the upturn in pig iron production each year has occurred in September, but this year output continued to drop, for the fifth consecutive month. The daily average for September was 92,720 tons, the lowest for any month since September, 1925. The decline from the daily average in August, however, was only 2,463 tons, or 2.6 per cent. The total figure for September, with 30 days, was 2,781,594 tons, compared with 2,950,674 tons for the 31 days in August.

Pig Iron

Pig iron sales at Pittsburgh appear to be decreasing from week to week, and the outlook is anything but bright.

Foundry iron is selling in single carloads at \$17.50, base, valley. Malleable is quoted at the same price, but no sales are noted. Due to low operating rates among the steelmakers the demand for basic iron probably is at the lowest point of the year to date. It is quoted at \$17, valley. Bessemer iron is selling in single carloads up to 250 tons at a time at \$18, valley.

Several important melters of pig iron at Chicago are offering their tonnage for fourth quarter at \$19, base, Chicago furnace. Estimates are that upwards of 5,000 tons thus are outstanding. Whether this will have the effect of weakening the present price of \$19.50 by 50 cents was a question.

At Birmingham small orders for

pig iron for delivery during October are plentiful. Production is being maintained, eleven blast furnaces on foundry, six on basic, one on ferromanganese and one on special brand iron. The quotation is steady at \$17.25, base, Birmingham. Large and small melters are buying only against immediate needs.

Copper

Buying this past week has been extremely light and the market has been made up mostly of rumors of low prices and high asking quotations.

Some metal sold down to 13.00 cents, Connecticut, and there was some question as to what extent this was an open market price. Some metal also sold at 13.12½ cents, while most producers refused to cut 13.25 cents. Buyers appeared to be uninterested at any price.

The export market was quiet and the price held unchanged at 13.50 cents c. i. f.

Tin

Prices went down again, reaching the lowest in two years at 57.50 cents Friday afternoon on nearby, and about the same on futures. By Monday afternoon the market had recovered above 59.00 cents on nearby and about this mark on futures. Statistics for September were not strong, showing an increase of nearly 600 tons in the world visible supply, but the trade had expected a much greater increase and had put prices down accordingly.

Consequently the news was bullish. Deliveries here were of good size for September though at 6,110 tons were smaller than average. Straits shipments were above average, but other shipments were not large, and deliveries in Europe cut into stocks, so the visible supply did not go up much. Users continue to

buy lightly, as use is light and they are well covered on nearby needs. World output is unchanged at about the highest of recent years. The market probably is not badly out of balance on the side of production, but for several years the weight has been on the side of use.

Zinc

Prime Western metal sold down several points this past week to 6.00, East St. Louis, the low point of the year touched last spring. In addition to light demand there has been the effect of a weak Joplin ore market. Smelter output has shown little change and there is the sentimental effect of a weak market abroad. The trade appears to need a little production curtailment.

Lead

Prices have held well in the face of weakness in London. At first the trade expected the market here to be forced down, but later it became evident that producers were determined to hold. It was unusual that there was no shading of the base price in the open market. Some business was done for October, but not a great deal.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$36.75; Commercial 45-55, \$33.75; plumbers', \$30.75, all per 100 pounds.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.00 to \$17.50; old iron axles, \$19.50 to \$20.00; steel springs, \$14.75 to \$15.25; No. 1 wrought iron, \$11.00 to \$11.50; No. 1 cast, \$13.00 to \$13.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 3½ cents; cast aluminum, 13¾ cents.

When you want the sheet metal job to last

Use ARMCO Ingot Iron

WHEREVER your workmanship is exposed to the weather—in gutters, downspouts ventilators, skylights, and other construction,—ARMCO Ingot Iron saves your customers' money. Its proved durability means many extra years of service and, of course, satisfied customers.

Salesmen or members of the Armco Distributors' Association of America recommend ARMCO Ingot Iron to you because they have seen how it

stands up in jobs their customers have done. They know, too, how soft ARMCO Ingot Iron is—how its workability will cut your shop costs.

Our salesmen also have business-building ideas to help you land more jobs. They have the service departments of the Association behind them. Call on them to help you build a bigger business on quality work with quality iron.



The ARMCO Distributors' Association of America
Executive Offices, Middletown, Ohio

Any of the members of the ARMCO Distributors' Ass'n of America will gladly serve your sheet metal needs

James Ackroyd & Sons
Albany, N. Y.
Albany Steel & Iron Supply Company
Albany, N. Y.
Arnold & Company
Baltimore, Md.
Banks-Miller Supply Co.
Huntington, W. Va.
Robert W. Bartram
Montreal, Que., Canada
Berger Brothers
Philadelphia, Pa.
The Blodgett & Clapp Company
Hartford, Conn.
The Braden Manufacturing Co.
Terre Haute, Indiana
Brown-Wales Company
Boston, Mass.
California Cornice Works
Los Angeles, Cal.
Ceco Steel & Wire Co.
Omaha, Nebr.
Chapin & Bangs
Bridgeport, Conn.
James A. Coe & Company
Newark, N. J.
Conklin Tin Plate & Metal Co.
Atlanta, Ga.
The Congdon & Carpenter Co.
Providence, R. I.
The Conner Mfg. Company
Louisville, Ky.
E. Corey & Company
Portland, Maine
Demmler Brothers Company
Pittsburgh, Pa.
Dixie Metal & Culvert Co.,
Jacksonville, Florida.
Dunham, Carrigan & Hayden Co.
San Francisco, Calif.
Ferdinand Dieckmann Company
Cincinnati, Ohio
Farwell, Ozmun, Kirk & Co.
St. Paul, Minn.
Follansbee Brothers Co.
Pittsburgh, Pa.
Gordon Metal Company
Richmond, Va.
Hammond Sheet Metal Company
St. Louis, Mo.
Holbrook, Merrill & Stetson
San Francisco, Calif.

Jacobs & Gile
Portland, Ore.
F. H. Lawson Company
Cincinnati, Ohio
David Lupton's Sons Co.
Philadelphia, Pa.
Merchant & Evans Co.
Philadelphia, Pa.
Mapes & Sprowl Steel Co.
Newark, N. J.
C. M. McClung & Co.
Knoxville, Tenn.
McClure-Johnston Co.
Pittsburgh, Pa.
McLennan-McFeely & Co.
Vancouver, B. C., Canada
The C. S. Mersick Co.
New Haven, Conn.
Milwaukee Corrugating Co.
Milwaukee, Wisc.
Moncrief-Lenoir Mfg. Co.
Houston, Texas
Orleans Steel Products Company
New Orleans, La.
J. M. & L. A. Osborn Co.
Cleveland, Ohio
Peden Iron & Steel Co.
Houston, Texas
Pidgeon-Thomas Iron Company
Memphis, Tenn.
H. T. Potts Company
Philadelphia, Pa.
W. F. Potts, Son & Co., Inc.
Philadelphia, Pa.
Republic Metalware Co.
Buffalo, N. Y.
Richards & Company
Boston, Mass.
F. O. Schoedinger
Columbus, Ohio
The Standard Metal Company
Indianapolis, Ind.
Strevell, Paterson Hardware Co.
Salt Lake City, Utah
Henry Weyand
Waterbury, Conn.
York Corrugating Co.
York, Pa.

ARMCO

TRADE MARK

INGOT IRON

The Purest Iron Made

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON

Chicago Fdy., No. 3.....	\$19 50
Southern Fdy. No. 2.....	23 26
Lake Superior Charcoal.....	27 04
Malleable.....	19 50

FIRST QUALITY BRIGHT TIN PLATES

IC 20x28 112 sheets.....	\$25 10
IX 20x28.....	29 40
IXX 20x28 56 sheets.....	16 20
IXXX 20x28.....	17 55
IXXXX 20x28.....	18 95

TERNE PLATES

IC 20x28, 40-lb. 112 sheets	\$26 00
IX 20x28, 40-lb. 112 sheets	28 50
IC 20x28, 25-lb. 112 sheets	21 75
IX 20x28, 25-lb. 112 sheets	24 25
IC 20x28, 20-lb. 112 sheets	20 00
IX 20x28, 20-lb. 112 sheets	22 50
IC 20x28, 16-lb. 112 sheets	18 50

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including	
1/4 in.—100 lbs.	\$4 55

COKE PLATES

Cokes, 80 lbs., base, 20x28.	\$13 40
Cokes, 90 lbs., base, 20x28.	13 80
Cokes, 100 lbs., base, 20x28.	14 00
Cokes, 107 lbs., base, IC	
30x28	14 30
Cokes, 125 lbs., base IX	
30x28	16 40
Cokes, 155 lbs., base, 56	
sheets	9 20
Cokes, 175 lbs., base, 56	
sheets	10 05
Cokes, 195 lbs., base, 56	
sheets	10 90

BLUE ANNEALED SHEETS

Base 16 ga.....per 100 lbs.	\$3 55
"Armco" 10 ga.....per 100 lbs.	4 00

ONE PASS COLD ROLLED BLACK

No. 18-20.....per 100 lbs.	\$3 75
No. 22.....per 100 lbs.	3 90
No. 24.....per 100 lbs.	3 95
No. 26.....per 100 lbs.	4 05
No. 27.....per 100 lbs.	4 10
No. 28.....per 100 lbs.	4 20
No. 29.....per 100 lbs.	4 25
No. 30.....per 100 lbs.	4 45

"ARMCO" GALVANIZED

"Armco" 24.....per 100 lbs.	\$6 15
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GALVANIZED

No. 16.....per 100 lbs.	\$4 80
No. 18.....per 100 lbs.	4 45
No. 20.....per 100 lbs.	4 40
No. 22.....per 100 lbs.	4 45
No. 24.....per 100 lbs.	4 80
No. 26.....per 100 lbs.	5 05
No. 27.....per 100 lbs.	5 15
No. 28.....per 100 lbs.	5 20
No. 30.....per 100 lbs.	5 70

BAR SOLDER

Warranted	
50-50.....per 100 lbs.	\$36 75

Commercial	
45-55.....per 100 lbs.	33 75
Plumbers.....per 100 lbs.	30 75

ZINC

In Slabs.....	\$ 8 50
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SHEET ZINC

Cash Lots (600 lbs.).....	\$13 00
Sheet Lots.....	13 00

BRASS

Sheets, Chicago base.....	17 1/2 c
Mill Base.....	18 c
Tubing, seamless base.....	26 c
Wire, No. 9, B & S Ga.....	18 1/2 c
Wire, No. 10, B & S Ga.....	18 1/2 c
Wire, No. 11, B & S Ga.....	19 c
Wire, No. 8, B & S Ga. and heavier	17 1/2 c

COPPER

Sheets, Chicago base.....	22 c
Mill Base.....	21 c
Tubing, seamless base.....	25 c
Wire, No. 9, B & S Ga.....	18 1/2 c
Wire, No. 10, B & S Ga.....	18 1/2 c
Wire, No. 11, B & S Ga.....	19 c
Wire, No. 8, B & S Ga. and heavier	17 1/2 c

LEAD

American Pig.....	\$7 00
Bar.....	8 00

TIN

Pig Tin.....per 100 lbs.	\$67 00
Bar Tin.....per 100 lbs.	68 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16.....	6c per lb.
Roll board.....	6 1/4 c per lb.
Mill board 3/32 to 1/4.....	6c per lb.
Corrugated Paper (250 sq. ft. to roll).....	\$6 00 per roll

BRUSHES

Hot Air Pipe Cleaning	
Bristle, with handle, each	\$0 85

Flue Cleaning	
Steel only, each.....	1 25

BURRS

Copper Burrs only.....	40-50%
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CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 40
American Seal, 10-lb. cans, net	80
American Seal, 25-lb. cans, net	2 07
Pecora.....per 100 lbs.	7 51

CHIMNEY TOPS

Adams' Revolving	Wt. Dos.	Prize Dos.
4 in.....	21 lbs.	\$11 00
6 in.....	24 lbs.	11 50
7 in.....	30 lbs.	13 50
8 in.....	33 lbs.	15 00
9 in.....	61 lbs.	16 50
10 in.....	66 lbs.	18 00
12 in.....	68 lbs.	22 00
14 in.....	110 lbs.	35 00

CLINKER TONGS

Front Rank, each.....	\$0 75
Per doz.....	8 40

CLIPS

Damper	
Adams No-Rivet Steel, with	
tail pieces, per gross.....	\$9 00
Tail pieces, per gross.....	3 50

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier.....per lb.	40c
2 1/2 lb.....per lb.	45c
2 lb.....per lb.	48c
1 1/2 lb.....per lb.	55c
1 lb.....per lb.	60c

CORNICE BRAKES

Chicago Steel Bending	
Nos. 1 to 6B.....	Net

CUT-OFFS

Gal., plain, round or cor. rd.	
26 gauge.....	30%
28 gauge.....	35%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.....	\$1 75
8 inch, each 25c, doz.....	2 40
9 inch, each 30c, doz.....	2 75
10 inch, each 35c, doz.....	3 00

Smoke Pipe	
7 inch, each.....	\$0 35
8 inch, each.....	40
9 inch, each.....	50
10 inch, each.....	60
12 inch, each.....	90

ADAMS No. 1 CHECK	
Check and Collar Complete	
8 inch, each.....	\$2 00
9 inch, each.....	2 25

End Check Only	
8 inch, each.....	1 60
9 inch, each.....	1 85

Collar Only	
8 inch, each.....	50
9 inch, each.....	65

No. 2 CHECK	
8 inch, each.....	1 00
9 inch, each.....	1 00
10% Disc. on Adams No. 1 and No. 2 Check	

Diamond Smoke Pipe	
7 inch, doz.....	\$ 2 00
8 inch, doz.....	3 20
9 inch, doz.....	4 80
10 inch, doz.....	6 00

Adams' Sheet Metal

7 inch, doz.....	\$ 1 40
8 inch, doz.....	2 20
9 inch, doz.....	2 40
10 inch, doz.....	2 80
12 inch, doz.....	3 50
14 inch, doz.....	5 00

DIGGERS

Post Hole	
Iwan's Split Handle (Eureka)	
4-ft. Handle.....per doz.	\$14 00
7-ft. Handle.....per doz.	36 00
Iwan's Hercules pattern, per doz.....	14 90

EAVES TROUGH

Galv. Crimpedge, crated 75 & 5%	
Zinc, "Barnes".....	60%

ELBOWS

Conductor Pipe	
Galv., plain or corrugated, round flat Crimp.	
28 Gauge.....	60%
26 Gauge.....	45%
24 Gauge.....	15%

Galv. & Terne Steel	
Plain Rd. and Rd. Corr.:	
28 Ga.....	60%
26 Ga.....	45%
24 Ga.....	15%

Square Corrugated	
No. 28 Gauge.....	50%
26 Gauge.....	35%

Fortico Elbows	
Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested.....	70 & 5%
Nested solid.....	70 & 5%

Sq. Corr., A. & B. & Octagon:	
28 Ga.....	50%
26 Ga.....	35%

Fortico	
1", 1 1/4", 1 1/2".....	45%

Copper	
16 oz., all designs.....	45%

Zinc—	
All styles.....	60%

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue	
"Milcor" No. 28 Gauge, Blue	
5-inch.....	\$1 25
6-inch.....	1 35
7-inch.....	1 75

Special Corrugated

6-inch.....	\$1 00
7-inch.....	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform Blue	
5-inch.....	\$1 75
6-inch.....	1 85
7-inch.....	2 15

WOOD FACES—50% off list.

FENCE	
724-6-12 1/4" (100 rods).....	\$28 63
1948-6-14 1/4" (100 rods).....	43 63

FILES AND RASPS

Heller's (American).....	50-10%
American.....	60-10%
Arcade.....	50%
Black Diamond.....	50%
Eagle.....	50%
Great Western.....	50%
Kearney & Foot.....	50%
McClellan.....	50%
Nicholson.....	50%
Simonds.....	50%

FIRE POTS

Clayton & Lambert's	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas.....	52%
West of above boundary.....	45%

Geo. W. Diener Mfg. Co. Ea.

No. 02 Gasolene Torch, 1 qt.....	\$ 5 55
No. 0250, Kerosene, or Gasolene Torch, 1 qt.....	7 50
No. 10 Tinner's Furn. Square tank, 1 gal.....	12 00
No. 15 Tinner's Furn. Round tank, 1 gal.....	12 00
No. 21 Gas Soldering Furnace.....	2 60
No. 110 Automatic Gas Soldering Furnace.....	10 50

Double Blast Mfg. Co.

Gasolene, Nos. 25 and 35.....	60%
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Quick Meal Stove Co.

Vesuvius, F. O. B. St. Louis	30%
(Extra Disc't. for large quantities)	

GALVANIZED WARE

Pails (Galv. after made), 10-qt.....	\$2 12
Tubs (Galv. after made).	
No. 1.....	6 00
No. 2.....	6 85

GLASS

Single Strength, A, 25-in. brackets.....	87%
Single Strength, A, 34 to 40-in. bracket.....	86%
Single Strength, A, all other brackets.....	89%
Double Strength, A, all sizes.....	86%

HANGERS

Conductor Pipe	
Milcor Perfection Wire.....	25%
Eaves Trough	
Milcor Triplex Wire.....	10%
Milcor Steel (galv. after forming) List.....	plus 12 1/2%
Milcor Selflock E. T. Wire, List.....	plus 50%

HOOKS

Box	
V. & B. No. 1, each.....	\$0 26
Conductor	
"Direct Drive" Wrought Iron for wood or brick.....	15%
Hay	
V. & B. No. 1, each.....	\$0 26

HUMIDIFIERS

"Front-Rank," Automatic	
In single lots.....	50%
In lots of 10 or more.....	50-54%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

LIFTERS

Stove Cover	
Coppered.....per gro.	\$6 00
Alaska.....per gro.	4 75

MALLETS

Tinners	
Hickory.....per doz.	\$2 25

MITRES

Galvanized steel mitres,	
28 Ga.....	70
26 Ga.....	60-20

NAILS

Cut Steel.....	\$4 25
Cut Iron.....	4 25
Wire	
Common.....	2 95
Cement Coated.....	2 95

(Continued on Page 89)



Quality Products *made of* Armco Iron

Two things have built a reputation for Lupton products—good material and good workmanship.

Typical of the first—good material—is Armco Ingot Iron, one of the metals from which all the Lupton products are regularly made. This iron of famous purity is refined and refined again until weakening elements are all worked out.

When metal such as this is made up under Lupton standards of precision, the result is a line of uniform and durable products which cannot fail to give satisfying service.

DAVID LUPTON'S SONS COMPANY
Allegheny Ave. and Tulip St.
PHILADELPHIA

LUPTON *Sheet Metal Products*

Say you saw it in AMERICAN ARTISAN—Thank you!

ADVERTISERS' INDEX

The dash (—) indicates that the advertisement runs on a regular schedule but does not appear in this issue.

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Lamneck & Co., W. E.	—		
Lamson & Sessions Co., The.	54		
Langenberg Mfg. Co.	—		
Lennox Furnace Co.	49		
Liberty Foundry Co.	—		
Linde Air Products Co.	57		
Lupton's Sons Co., David.	79		

Markets—Continued from page 78

NETTING, POULTRY

Galvanized before weaving	57½-5%
Galvanized after weaving.	52½-5%

PASTE

Asbestos Dry Paste:	
300-lb. barrel	\$16 00
100-lb. barrel	8 75
35-lb. pail	3 50
10-lb. bag	1 10
5-lb. bag	60
2½-lb. cartons.	35

PIPE

Conductor	
Cor. Rd., Plain Rd. or Sq.	

Galvanized

Crated and nested (all gauges)	75-2½%
Crated and not nested (all gauges)	70-15%

Furnace Pipe

Double Wall Pipe and Fittings	40-10%
Single Wall Pipe, Round	
Galvanized Pipe	40-10%
Galvanized and Tin Fittings	40-10%

Lead

Per 100 lbs.	\$12 50
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Stove Pipe

"Milcor" "Titelock" Uniform Blue Stove	
28 gauge, 5 inch U. C.	11 50
28 gauge, 6 inch U. C.	12 25
28 gauge, 7 inch U. C.	14 25
30 gauge, 5 inch U. C.	10 50
30 gauge, 6 inch U. C.	11 25
30 gauge, 7 inch U. C.	13 25

T-Joint Made up

6-inch, 28 ga. per doz.	\$ 5.00
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All Zinc

No. 11, all styles.	60%
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POKERS, STOVE

W'r't Steel, str't or bent,	per doz. \$0 75
Nickel Plated, coil handles,	per doz. 1 10

POKERS, FURNACE

Each	\$0 50
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PULLEYS

Furnace Tackle, per doz.	\$0 60
Furnace Screw (enameled)	per gro. 6 00
Furnace Screw (enameled)	per doz. 75

Ventilating Register

Per gross	9 00
Small, per pair.	30
Large, per pair.	50

PUTTY

Commercial Putty, 100-lb Kits	\$3 40
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QUADRANTS

Malleable Iron Damper.	10%
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REDUCERS—Oval Stove Pipe

Per Doz.	
7-6, 1 doz. in carton.	\$2.25

REGISTERS AND BORDERS—

Baseboard, Floor and Wall.	
Cast Iron	20%
Steel and Semi-Steel.	40%
Baseboard	40%
Wall	40%
Adjustable Ceiling Ventilators.	40%

Register Faces—Cast and Steel

Japanned, Bronzed and Plated, 4x6 to 14x14.	40%
Large Register Faces—Cast, 14x14 to 35x42.	60%
Large Register Faces—Steel, 14x14 to 35x42.	65%

RIDGE ROLL

Galv., Plain Ridge Roll, b'd'd	75-10-5%
Galv., Plain Ridge Roll, crated	75-10%
Globe Finials for Ridge Roll	50%

ROOFING

Best grade, slate surf. prepared	2 30
Best talc surfaced.	2 65
Medium talc surfaced.	3 00
Light talc surfaced.	1 20
Red Rosin Sheeting, per ton	57 00

SCREWS

Sheet Metal	
7. ½x½, per gross.	\$0 53
No. 10, ½x3/16, per gross.	65
No. 14, ½x½, per gross.	89

SHEARS, TINNERS' & MACHINISTS'

Viking	\$23 00
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Lennox Throatless

No. 13	35%
Shear blades	10%
(f. a. b. Marshalltown, Iowa.)	

SHIELDS, REGISTER

No. 1 "Gem" floor.	\$12 00 doz.
No. 2 "Gem" wall.	6 00 doz.

SHOES

Galv. 28 Gauge, Plain or corrugated round flat crimp.	60%
26 gauge round flat crimp.	45%
24 gauge round flat crimp.	15%

SNIPS, TINNERS'

Clover Leaf	40 & 10%
National	40 & 10%
Star	50%
Milcor	Net

SQUARES

Steel and Iron.	Net
(Add for bluing, \$3 per doz. net.)	

Mitre	Net
-------------	-----

Try	Net
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Try and Bevel.	Net
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Try and Mitre.	Net
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Fox's	per doz. \$6 00
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Winterbottom's	10%
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STOPPERS, FLUE

Common	per doz. \$1 10
Gem, No. 1.	per doz. 1 10
Gem, flat, No. 3.	per doz. 1 00

VENTILATORS

Standard.	30 to 40%
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WIRE

Plain annealed wire, No. 8, per 100 lbs.	\$3 05
Galvanized barb wire, per 100 lbs.	3 90
Wire Cloth—black painted, 12-mesh, per 100 sq. ft.	1 65
Cattle Wire—galvaniz'd catch weight spool, per 100 lbs.	3 65
Galvanized Hog Wire, 80 rod spool, per spool.	3 13
Galvanized Plain Wire, No. 9, per 100 lbs.	3 40
Stove Pipe, per stone.	1 10

WRINGERS

No. 790, Guarantee	each \$5 10
No. 770, Bicycle	each 4 70
No. 670, Domestic	each 4 35
No. 110, Brighton	each 3 70
No. 750, Guarantee	each 5 10
No. 740, Bicycle	each 4 70
No. 22, Pioneer	each 3 40
No. 2, Superb	each 2 65

The NEW IMPROVED "STANDARD"**Rotable Ventilator**

Patents pending

This favorite cone-shaped ventilator is now improved in several important points.

The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.

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Our Hobby, "Quality and Service"

We use nothing lighter than 28 Gauge

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send order direct to us with your jobbers name and
shipment will be made same day as received.

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and to Bend All
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How To Make Elbows

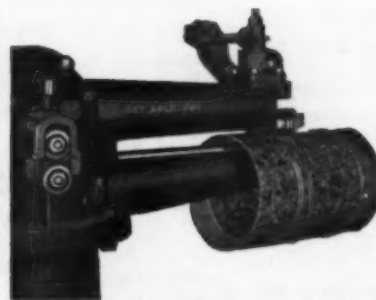
Quickly and Economically



THE first operation. The form or jig is placed on the outside of the pipe and clamped into position. The horizontal lever clamps down the rolls and with but one revolution of the pipe both the cutting and edging is done in one operation.



THE second operation. By simply reversing the jig but without removing it, the second cut is made, thus cutting and edging the second and third segments for the 3-piece adjustable elbow. Each cutting and edging operation takes but a few seconds.



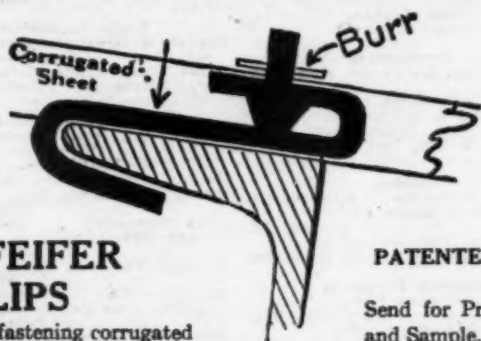
THE third operation. The three segments are snapped together by hand and put on the opposite arm of the machine, called the setting down end. This is to tighten or loosen the seams as the operator desires. The end of the elbow may then be crimped on the rolls shown in the center of the machine.

THIS tells briefly the simple operations that are necessary to make elbows on the Chicago Elbow Machine. This machine is practical, cuts labor in half making elbows, can be operated by any mechanic. Write for full particulars.

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Ryerson & Son, Inc.,
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Lamson & Sessions Co.,
Cleveland, Ohio

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Milwaukee, Wis.

Roofing—Iron and Steel.
American Rolling Mill Co.,
Middletown, Ohio
Burton Co., The W. J.,
Detroit, Mich.
Friedley-Voshardt Co.,
Chicago, Ill.
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Ryerson & Son, Inc.,
Chicago, Ill.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Roofing—Tin.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Taylor Co., N. & G.,
Philadelphia, Pa.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Roofing—Zinc.
New Jersey Zinc Sales Co., The,
New York, N. Y.

Rubbish Burners.
Hart & Cooley Co.,
New Britain, Conn.
Yardboy Incinerator Co.,
Chicago

Sal-Ammoniac.
Special Chemicals Co.,
Waukegan, Ill.

Schools—Sheet Metal Pattern Drafting.
St. Louis Technical Institute,
St. Louis, Mo.

Schools—Warm Air Heating.
St. Louis Technical Institute,
St. Louis, Mo.

Screws—Hardened Metallic Drive.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Parker-Kalon Corp.,
354 West 13th St., New York

Screws—Hardened Self-Tapping.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Parker-Kalon Corp.,
354 West 13th St., New York

Screens—Perforated Metal.
Harrington & King Perforating
Co.,
Chicago

Shears—Hand and Power.
Double-Duty Mfg. Co.,
Aurora, Ill.
Marshalltown Mfg. Co.,
Marshalltown, Iowa
Peck, Stow & Wilcox Co.,
Southington, Conn.
Ryerson & Son, Inc.,
Chicago, Ill.
Viking Shear Co.,
Erie, Pa.

Sheet Metal Screws—Hardened, Self-Tapping.
Parker-Kalon Corp.,
354 West 13th St., New York

Sheets—Black and Galvanized.
American Rolling Mill Co.,
Middletown, Ohio
Burton Co., The W. J.,
Detroit, Mich.
Central Alloy Steel Corp.,
Massillon, Ohio
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Ryerson & Son, Inc.,
Chicago, Ill.
Taylor Co., N. & G.,
Philadelphia, Pa.
Wheeling Corrugating Co.,
Wheeling, W. Va.

Sheets—Iron.
American Rolling Mill Co.,
Middletown, Ohio
Central Alloy Steel Corp.,
Massillon, Ohio
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Ryerson & Son, Inc.,
Chicago, Ill.

Sheets—Tin.
Merchant & Evans Co.,
Philadelphia, Pa.
Taylor Co., N. & G.,
Philadelphia, Pa.

Sheets—Zinc.
New Jersey Zinc Sales Co., The,
New York, N. Y.

Shingles and Tiles—Metal.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Wheeling Corrugating Co.,
Wheeling, W. Va.

Shingles—Zinc.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City

Sifters—Ash.
Diener Mfg. Co., G. W.,
Chicago, Ill.

Sky Lights.
Lupton's Sons Co., David,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City

Snips.
Peck, Stow & Wilcox Co.,
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Ryerson & Son, Inc.,
Chicago, Ill.

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Chicago, Ill.
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Milwaukee Corrugating Co.,
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Clayton & Lambert Mfg. Co.,
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Diener Mfg. Co., G. W.,
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Double Blast Mfg. Co.,
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Quick Meal Stove Co.,
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Ryerson & Son, Inc.,
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Soldering Supplies.
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Aurora, Ill.
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Specialties—Hardware.
Diener Mfg. Co., G. W.,
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Hessler Co., H. E., Syracuse, N. Y.

Stars—Hard Iron Cleaning.
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New Jersey Zinc Co., The,
New York, N. Y.

WANTS AND SALES

Any yearly subscriber to **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired.

BUSINESS CHANCES

Lightning Rods—Dealers who are selling **Lightning Protection** will make money by writing us for our latest **Factory to Dealer Prices**. We employ no salesmen and save you all overhead charges. Our **Pure Copper Cable and Fixtures** are endorsed by the **National Board of Fire Underwriters** and hundreds of dealers. Write today for samples and prices. **L. K. Diddle Company, Marshfield, Wis.**

Here is a wonderful opportunity for a tinner to step into a going shop fully equipped with tools, 1 ton truck and Dodge car. Equipment lists at \$3,000. Will sell for \$2,500 and turn over \$1,600 worth of work at a good profit. Will stay with new owner until this work is completed if necessary. This shop is located in Evanston, Illinois. Address **D-457, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

For Sale—1,000 pound hand elevator complete. Everything in fine condition. For a two story building. Not been used very much. Building is rented to a business where they do not need the elevator but the space. Make me an offer in cash or trade. Would like to buy large burring machine and 30 inch roller. **Fred Salzwedel, Columbus, Wisconsin.** **B-457**

For Sale—On account owner's death, good clean stock of hardware. This store is located in Neillsville, Wisconsin, on the main street. This is a fine dairy section and a good opportunity for some live hardware man. Address **The Cash Hardware Company, Neillsville, Wisconsin.** **K456**

For Sale—Well established and fully equipped sheet metal heating and roofing business. Ash Block shop with sewer, water, light and natural gas. Well built 6 room house with bath and slate roof. In city of 45,000 population. Bargain for quick sale. **W. R. Allen, 216 Maple Avenue, Warren, Ohio.** **C-457**

For Sale—Stove patent that is a great improvement and much more efficient than any stove now made. Will burn any kind of fuel. Can be made up as an ordinary heating stove, parlor furnace or furnaces of the larger type. Address **W. E. Toler, Pawnee, Oklahoma.** **W455**

Wanted—Mueller or Glit Edge furnaces or any other high grade make. If prices are right will buy entire lot. State full particulars in first letter. Address **S-455, AMERICAN ARTISAN, 620 South Michigan, Chicago.**

For Sale—Sheet metal shop. Only one in town of 8,000 population. Doing good business. If you want a bargain let me hear from you at once. Address **M-456, AMERICAN ARTISAN, 620 S. Michigan, Chicago.**

For Sale—Plumbing and sheet metal shop in good Kansas town. Plenty of work. Good stock and tools. Have reasons for selling. Address **Z-456, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

BUSINESS CHANCES

Wanted—A good live partner with some money to invest in a good sheet metal shop; one who can sell and take care of business end. Address **X-456, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

For Trade—80 acres of very good land in Haakon County, South Dakota. Will exchange for hardware stock, furnace or sheet metal. Address **L-456, AMERICAN ARTISAN, 620 S. Michigan, Chicago, Ill.**

Wanted — From nearby source, 1 No. 2751 Jewel furnace without castings. When writing state lowest cash price. **Butters-Fetting Co., 461 11th Ave., Milwaukee, Wis.** **R455**

For Sale—Well established sheet metal, heating and roofing business. Address **T-455, AMERICAN ARTISAN, 620 South Michigan, Chicago.**

SITUATION WANTED

Situation Wanted—Have sold my interest in a sheet metal shop and desire a position in a good shop connected with a hardware store at a reasonable salary or percentage basis. Long experience and practical warm air furnace estimator and Standard Code installer. **H. J. Ester, 7215 West Main Street, Washington, Missouri.** **E-457**

Situation Wanted—By an all around tinner in a good general jobbing shop with a reliable firm. Can lay out and complete my own furnace, heating and ventilating work. Have been at the trade for 25 years. Nothing but steady job considered. Address **F. S. McGuffin, 1714 Second Street, Detroit, Michigan.** **D456**

Wanted—Galvanized and black sheet mill to represent in Michigan on commission basis. Large acquaintance with carload buyers. Have headquarters in Detroit. Stenographer and phone service. Address **Z 456, American Artisan, 620 South Michigan Avenue, Chicago, Illinois.**

Capable sheet metal worker and pattern cutter, also A1 furnace man, wants position. 18 years' experience. Steady and reliable. Desire steady employment with reliable firm in Missouri or adjoining states. State full particulars and wages. Address **American Artisan, 620 South Michigan, Chicago.** **A-456**

Situation Wanted—By a good reliable tin and sheet metal worker. Good bench man. Also inside and outside work. Can cut all my own patterns if necessary. I am also a good furnace man. For particulars address **Box 8, St. Albans, Vermont.** **P456**

Situation Wanted—By a first-class tinner, plumber and can do furnace work, also steam, hot water and repairing of all kinds. Want steady job and can come any time. State wages. Married man. Address **Y-455, AMERICAN ARTISAN, 620 South Michigan, Chicago.**

Combination Man can handle sheet metal work, hot water, steam and furnace work. A1 references. West preferred. Job must be year around proposition. Address **H. S. G., 1031 Tyson Street, Syracuse, New York.** **C-456**

Situation wanted by good sheet metal and furnace man. Can do plumbing. Will go to work any time. Steady job preferred. Can give A1 references. Married. Address **X-455, AMERICAN ARTISAN, 620 South Michigan, Chicago.**

Young man with engineering experience wishes to connect up with some one in warm air furnace business. Let me hear from you, advising of opportunities. Address **R-456, AMERICAN ARTISAN, 620 S. Michigan, Chicago, Ill.**

Situation wanted by first-class sheet metal worker and furnace installer. 27 years' experience. State wages and all in first letter. Address **B. J. Hawkins, Dexter, Michigan.** **O456**

SITUATION WANTED

Wanted—Permanent position by tinner and plumber who is capable as foreman. Carry Illinois and Wisconsin state license. Address **Q-456, AMERICAN ARTISAN, 620 S. Michigan, Chicago, Ill.**

TINNERS' TOOLS

Wanted to Buy—Lyon Conklin cross lock seamer for putting tin in rolls. State price, condition and how long used. Will pay fair price for same. **H. L. McArdle & Son, Troy, Alabama.** **F-456**

For Sale—Set of tinner's tools except brake. All in A-1 condition. Price only \$150.00. **B. F. Jones, 112 Grant Street, S. W., Massillon, Ohio.** **W-456**

Wanted to Buy — 8- or 10-foot steel brake. Give full particulars and price in first letter. Address **P-455, AMERICAN ARTISAN, 620 South Michigan, Chicago.**

For Sale—One set tinner's tools; good condition; price reasonable. Apply **Redlich & Son, Jerseyville, Ill.** **O455**

HELP WANTED

Wanted—A furnace salesman to take up territory left by one salesman for seven years. Leaving on account of health. Steady year around. I prefer elderly man and married with family. Address **A-457, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

Wanted — Furnace salesman to represent manufacturer in middle west. Must be capable of planning and estimating heating systems according to the Standard Code and working territory close. Address **H-457, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

Wanted—Furnace salesman not over 35 to sell dealers and help sell individual customers in the state of Iowa. Good opportunity for men that can qualify. Address **G-457, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

Wanted—Good tinner and furnace man who is looking for a steady job. No dead beats need apply. This is a good steady job for the right man. Address **Q-455, AMERICAN ARTISAN, 620 South Michigan, Chicago, Ill.**

Wanted—Tinner for inside and outside work. Must be first-class. Steady work and good wages to the right man. Address **The Guyan Roofing Company, Logan, West Virginia.** **J456**

Wanted at Once—First class sheet metal workers, experienced on ventilation or blow pipe work. Steady work. Address **Swords Bros. Co., Rockford, Illinois.** **E-456**

Wanted—Plumber and fitter. Do not reply unless you want steady job. Must be sober all the time. **Chas. Soames, 15 West 5th Street, Peru, Ind.** **Y-456**

BOOKS

Manual of Automotive Radiator Construction and Repair, by **F. L. Curfman** and **T. H. Leet**—Anyone interested in Radiator Repairing will find the 185 pages of practical instructions and the 120 illustrations showing actual construction and repairing a big help. In a condensed manner some four to five thousand answers to questions are given. It is thoroughly practical as both authors are men of wide experience in this work. Printed in large, easy to read type. Measures 5½x9 inches. Price \$2.50. Order from **Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

BOOKS

Kinks and Labor Saving Methods for Sheet Metal Workers, Vols. 1 and 2—Volume I. There are hundreds of ideas and expedients, all contributed by sheet metal workers throughout the country, illustrated by cuts and original drawings. Cloth bound. Size 4½x7 inches. Price \$1.00. Volume II written in same popular style as Volume I. Places at your disposal a comprehensive collection of ingenious ways of executing many practical tasks in much more simple way than if done in the regulation manner. Also contains special articles on Automobile Repairing; gives a very practical series of illustrated directions on erecting metal ceilings with ten guide rules which will save time, trouble and expensive mistakes. Price \$1.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue Chicago, Illinois.

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Department foreman for a tin and galvanized furnace fittings factory. Should be a pattern draftsman, accurate and know how to make and instruct help efficiently to produce fittings in quantities at minimum cost. State your qualifications, age, married or single, experience in furnace fittings and where, when available. Factory located in middle west. Address F-457, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

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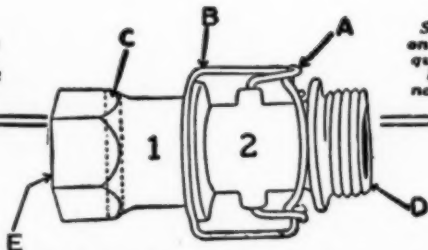
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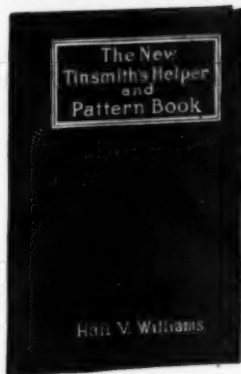
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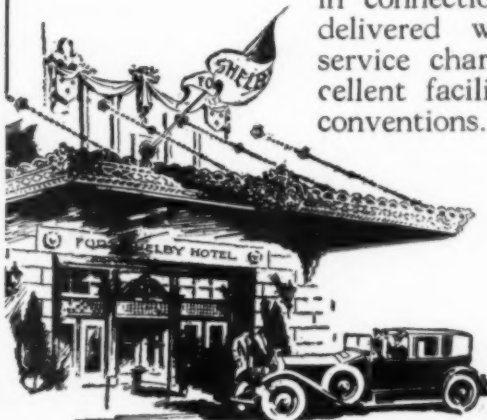
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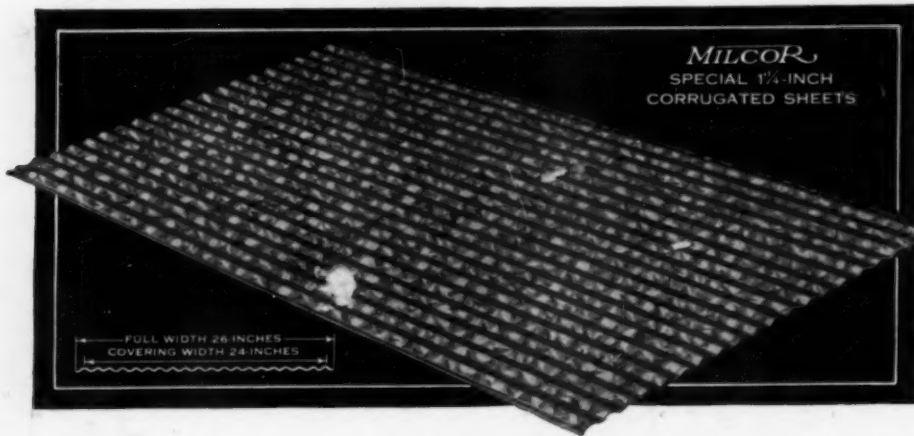
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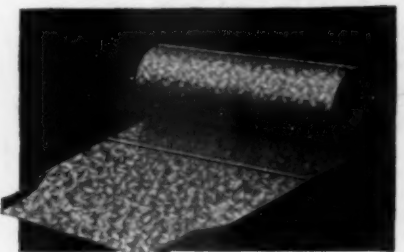
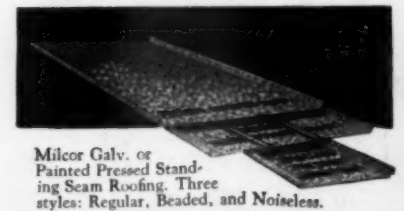
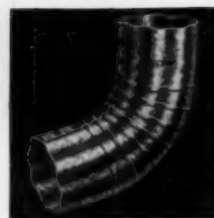
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